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Berman et al.

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(54) **SYSTEM AND METHOD FOR PROVIDING REPEATED ELIMINATION BONUS IN GAMING ACTIVITIES**

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(52) **U.S. Cl.** **463/18**; 463/20
(58) **Field of Search** ..... 463/18–21; 273/143 R

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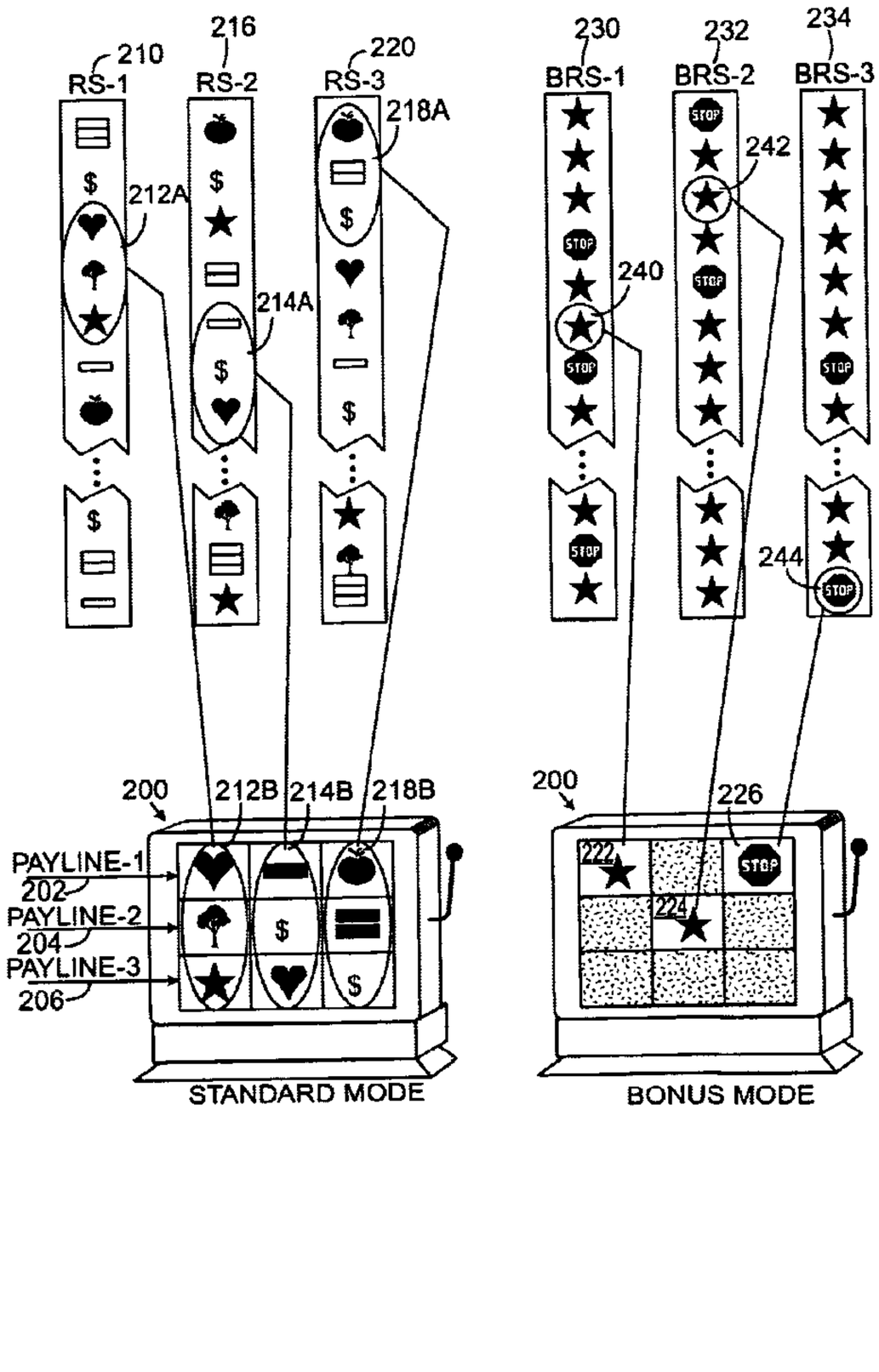
Primary Examiner—Andrew M. Dolinar

(57) **ABSTRACT**

A system and method for facilitating participation by a player in a bonus event of a slot machine. A display grid associated with the slot machine is presented, where the display grid includes a plurality of active display segments. Symbols are presented in each of the active display segments, such as by randomly selecting symbols and displaying a randomly selected symbol in each of the active display segments. At least some of the symbols are discontinue symbols which, if presented in a display segment, causes that display segment to be deactivated, thereby eliminating that display segment from the bonus event. The presentation of symbols and subsequent deactivation of symbols associated with discontinue symbols continues until all of the active display segments have been deactivated.

55 Claims, 17 Drawing Sheets



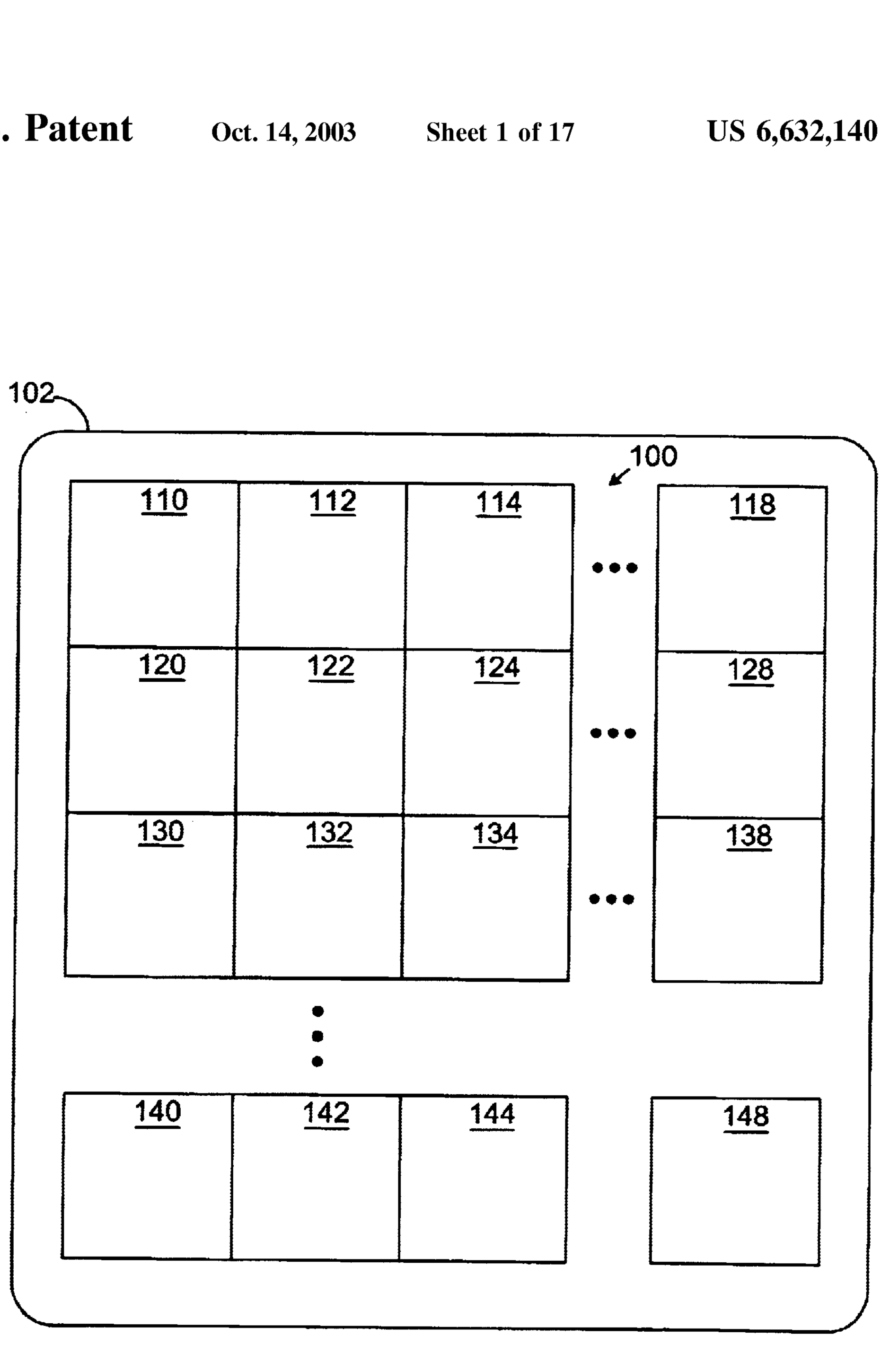

102
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FIG. 1-A

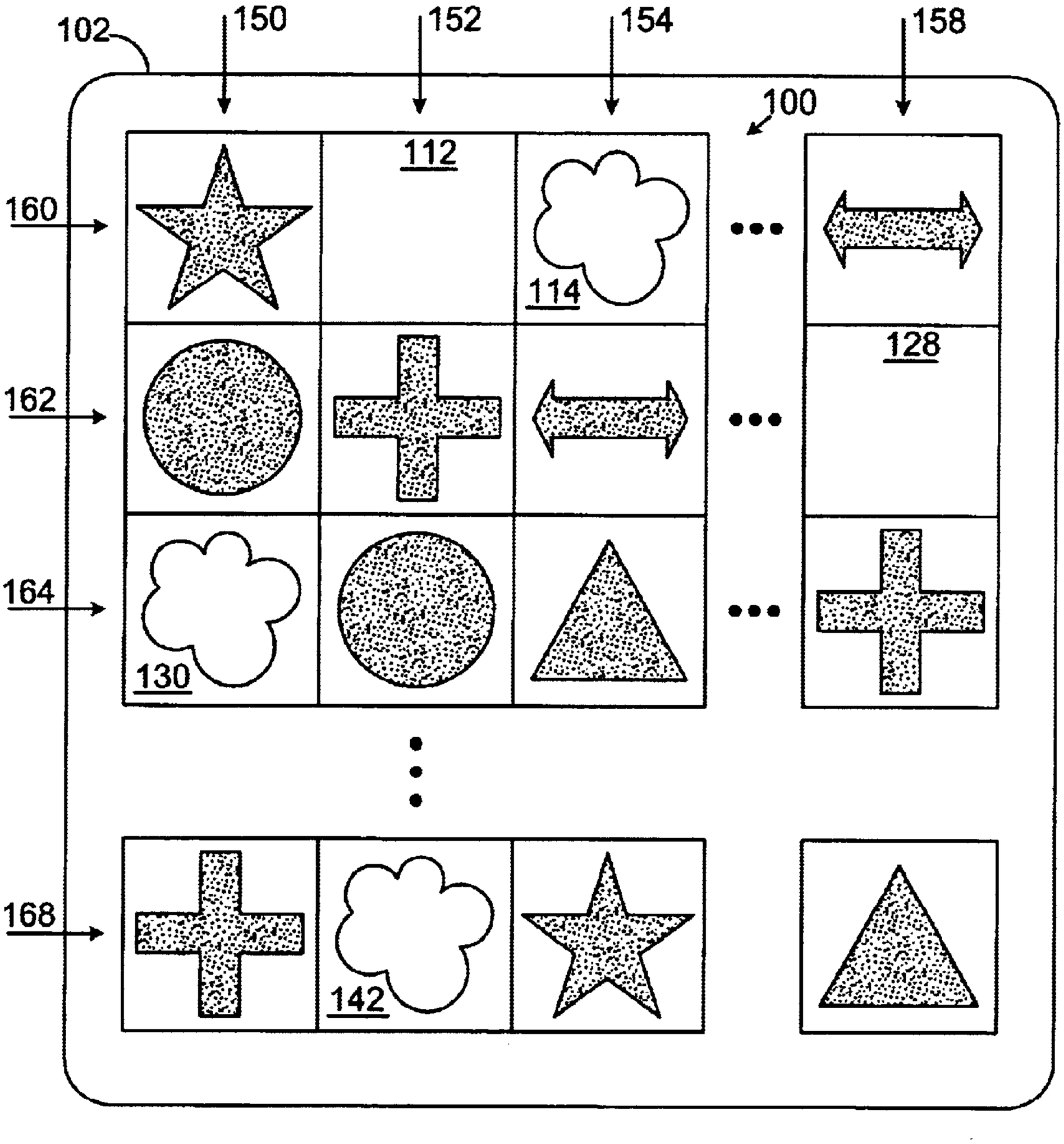
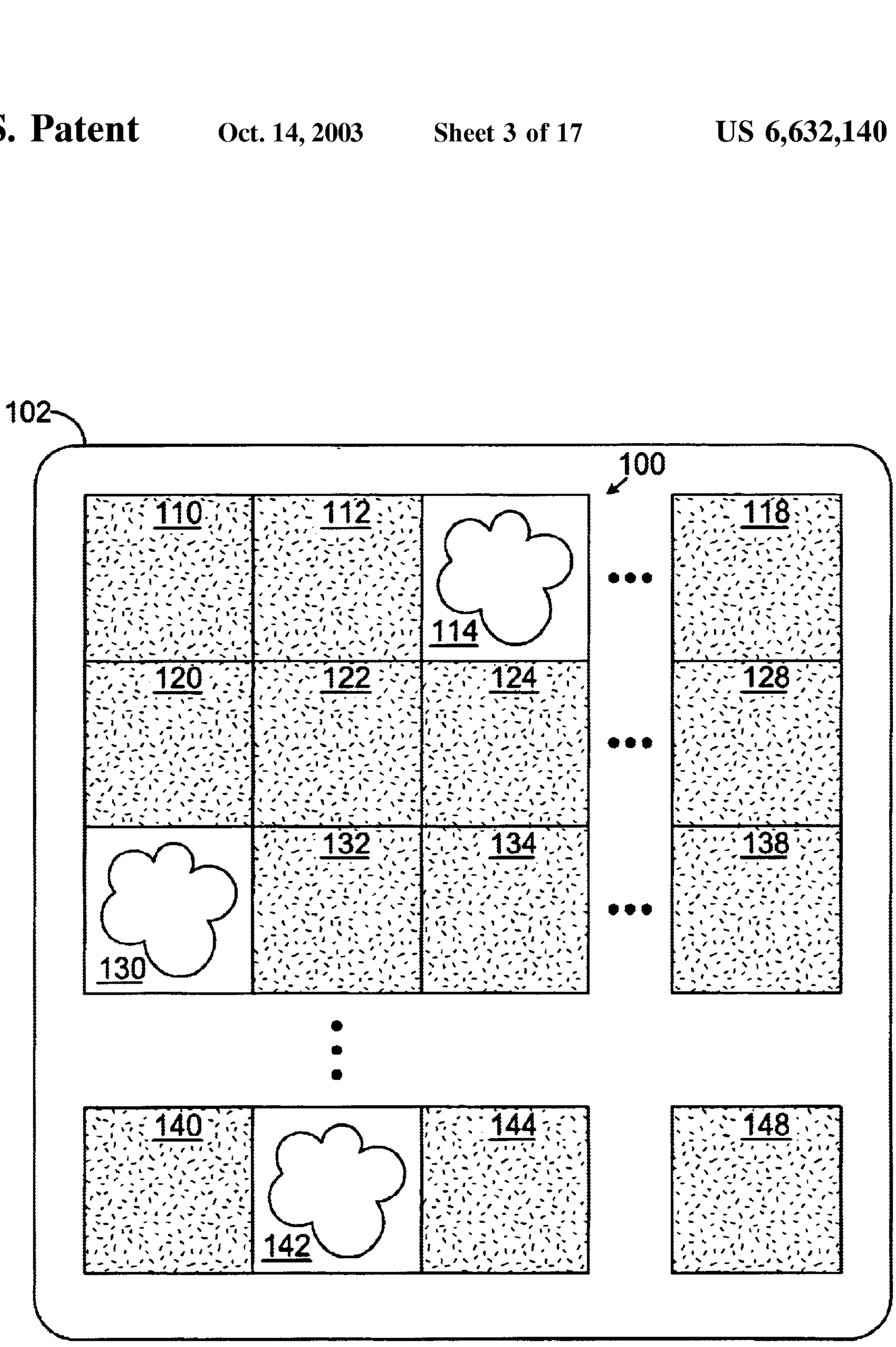


FIG. 1-B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144
148

FIG. 1-C

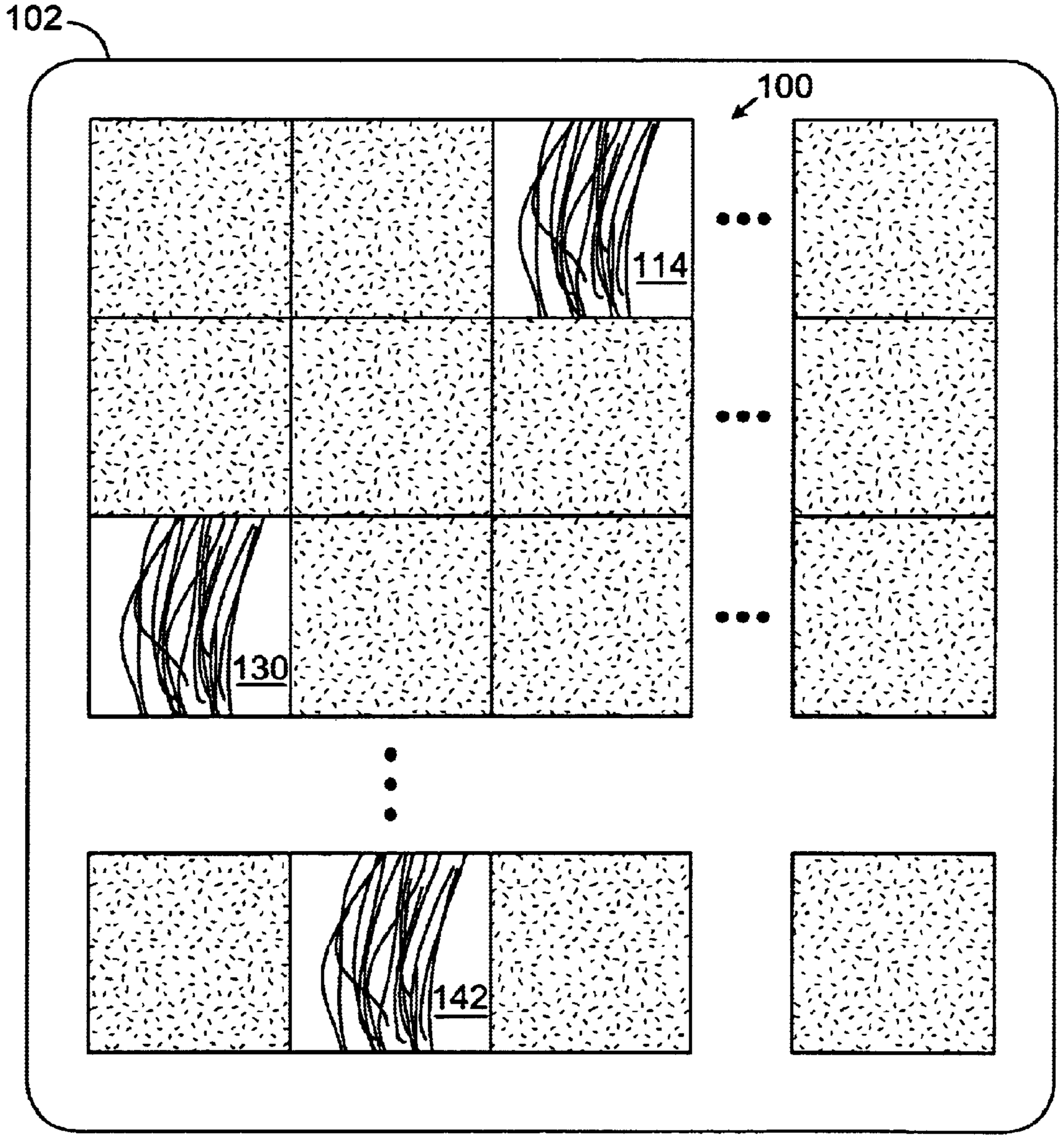


FIG. 1-D

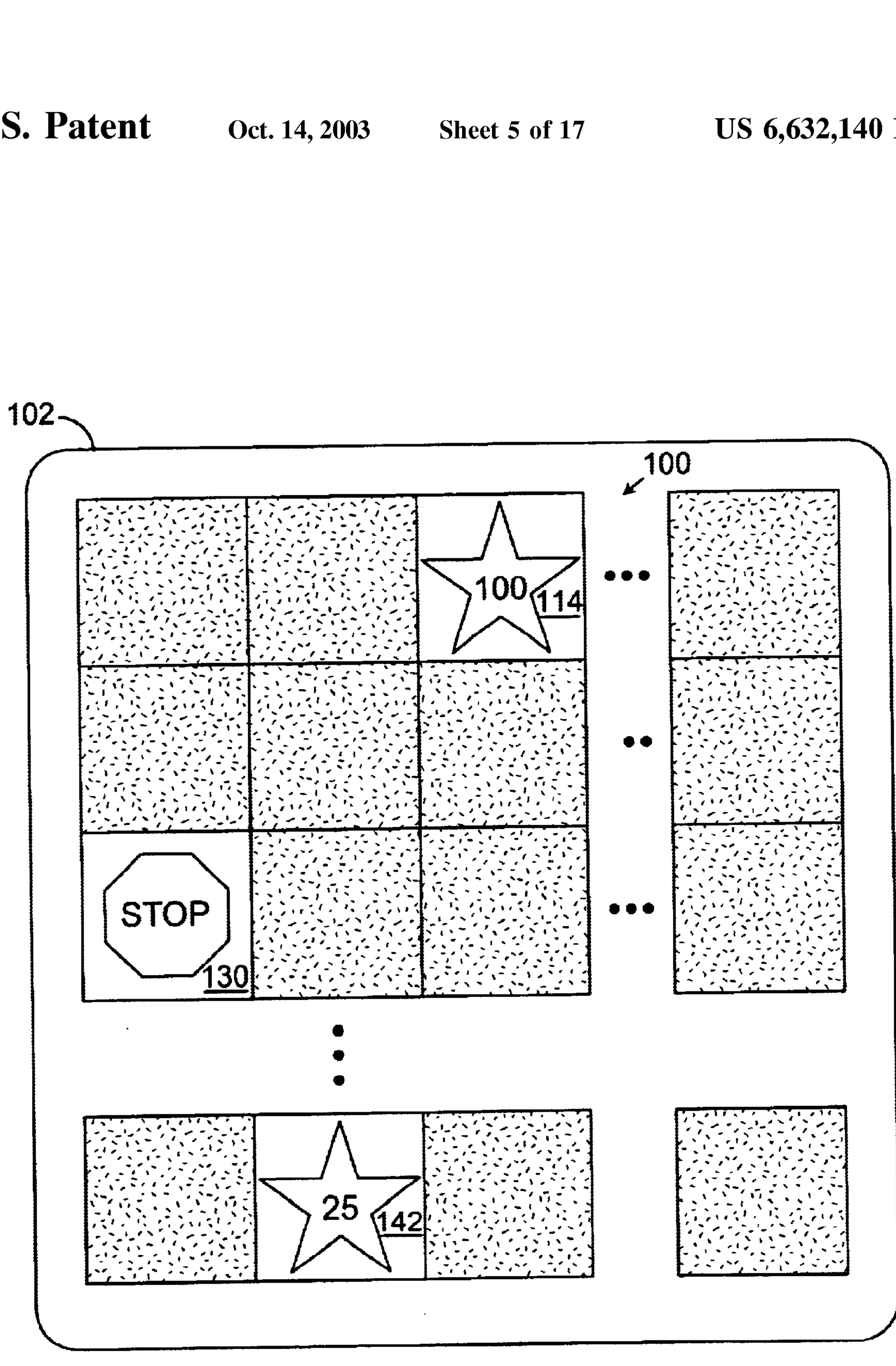


FIG. 1-E

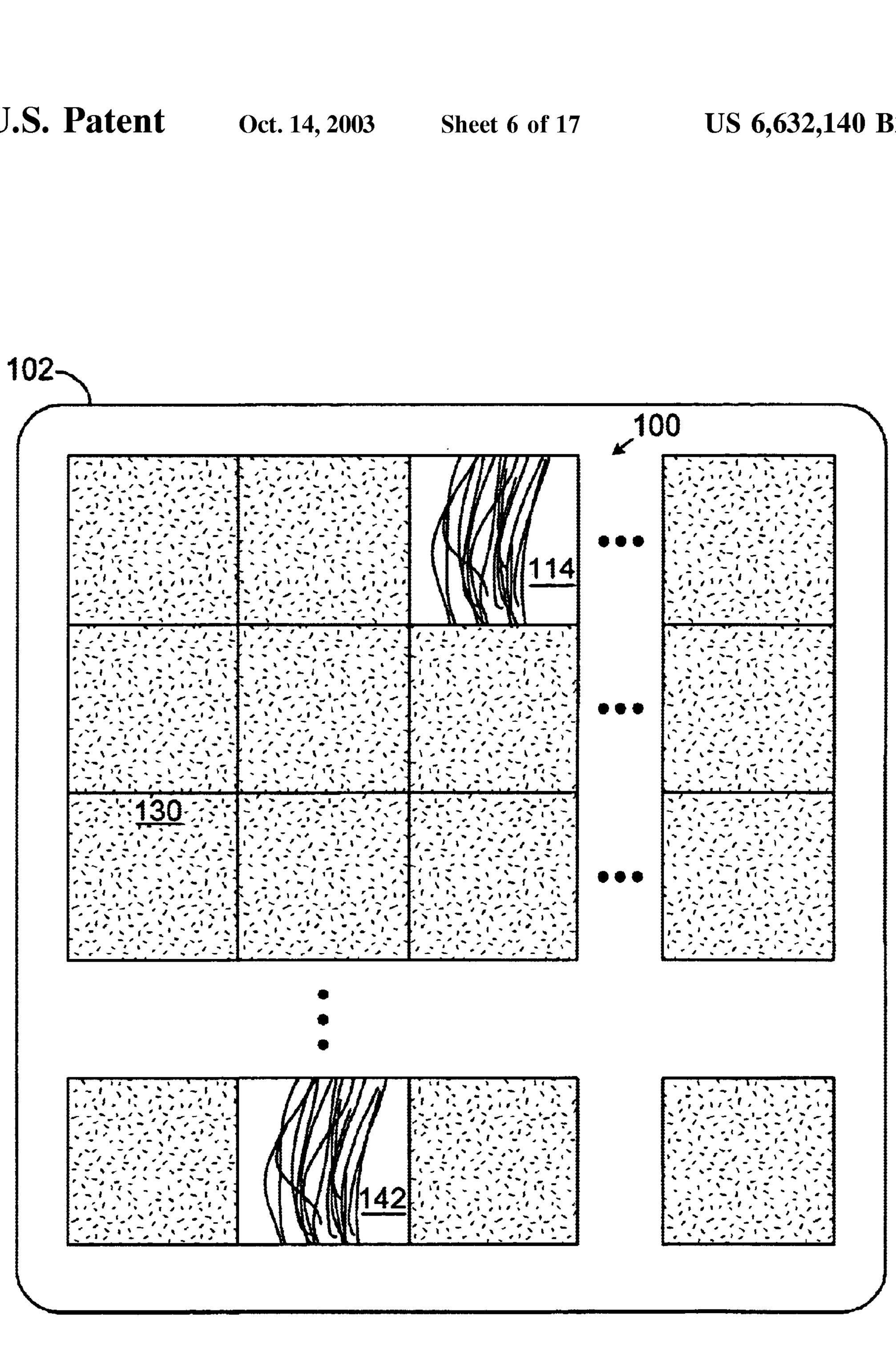


FIG. 1-F

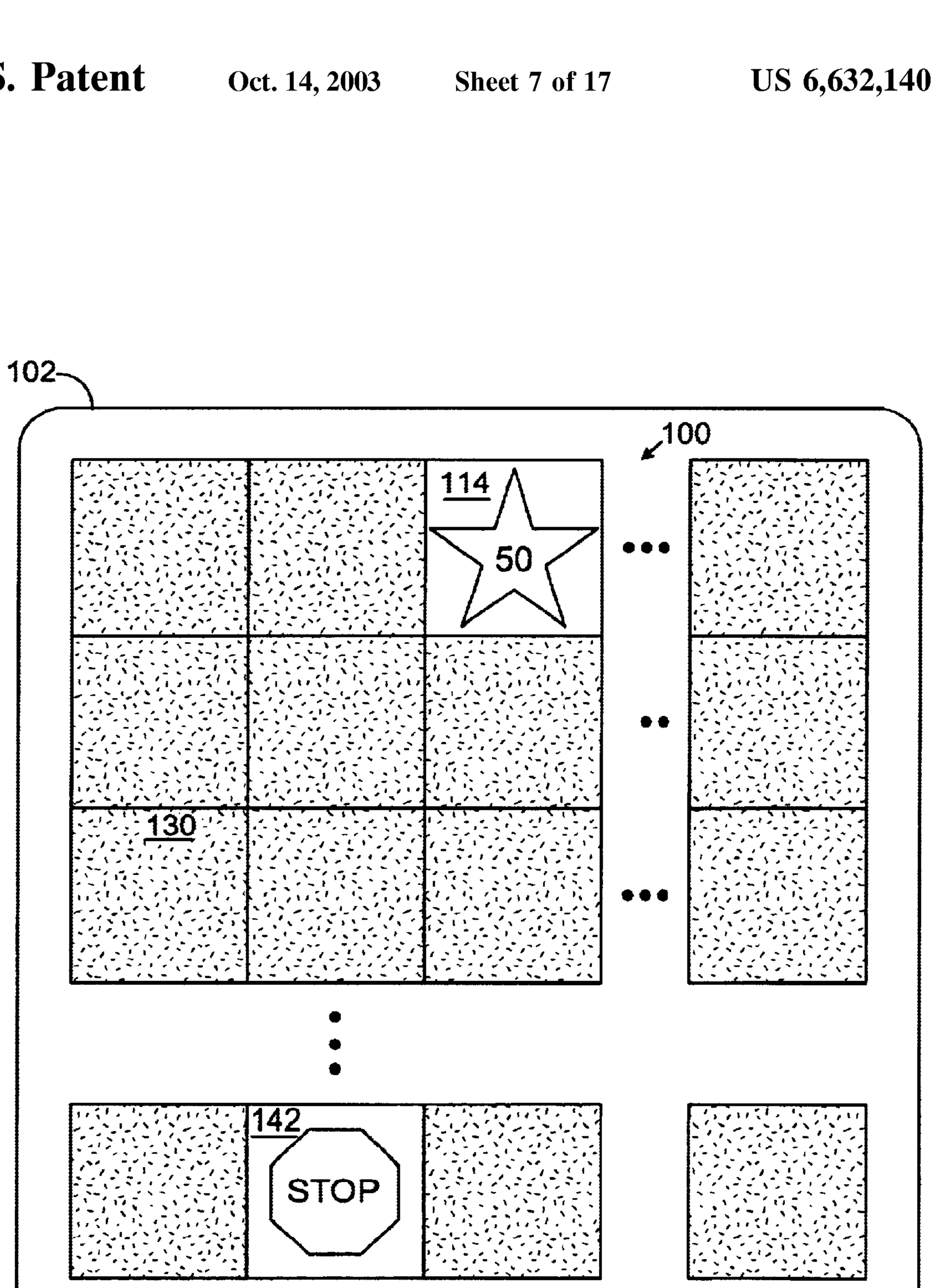


FIG. 1-G

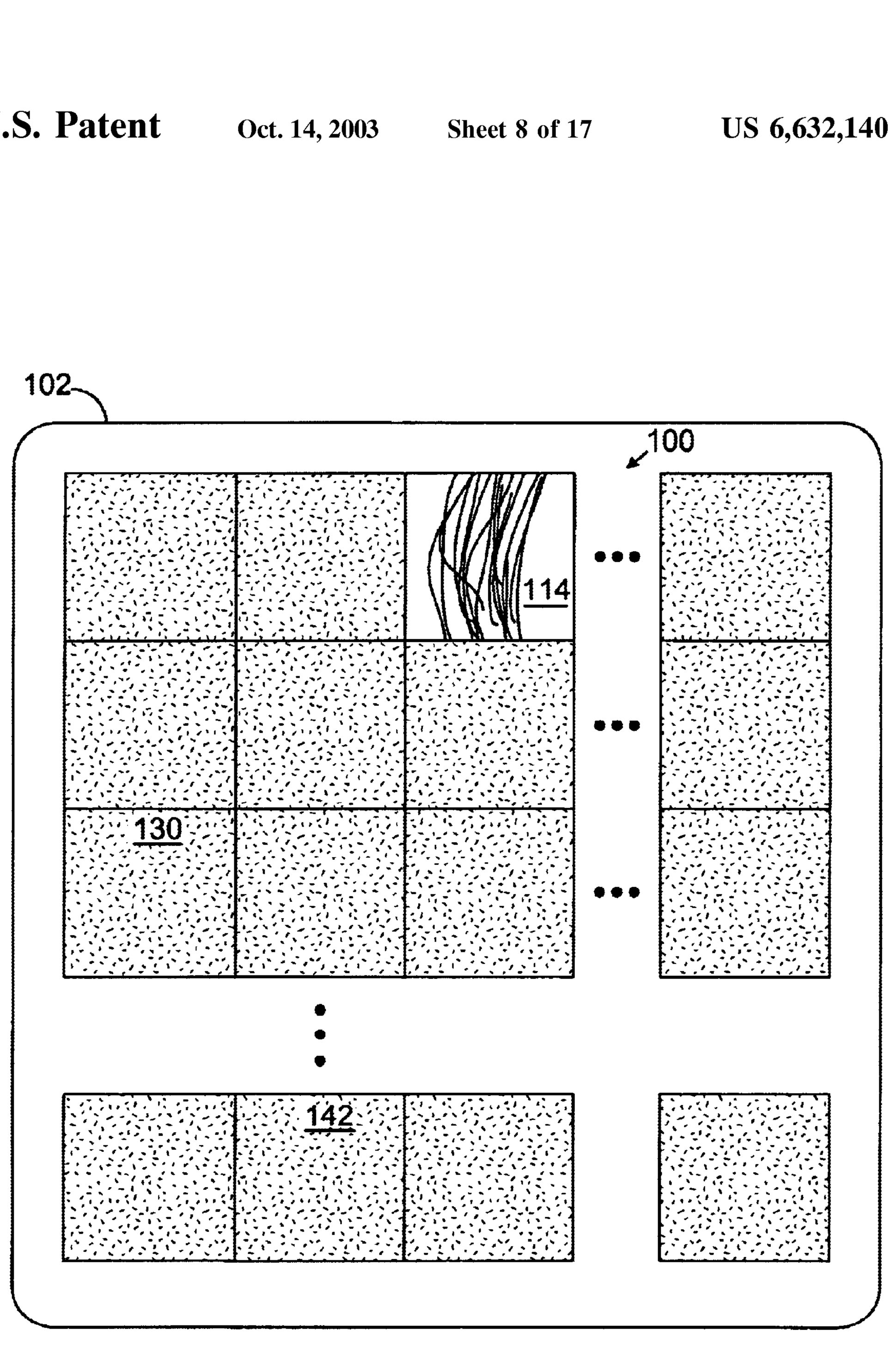


FIG. 1-H

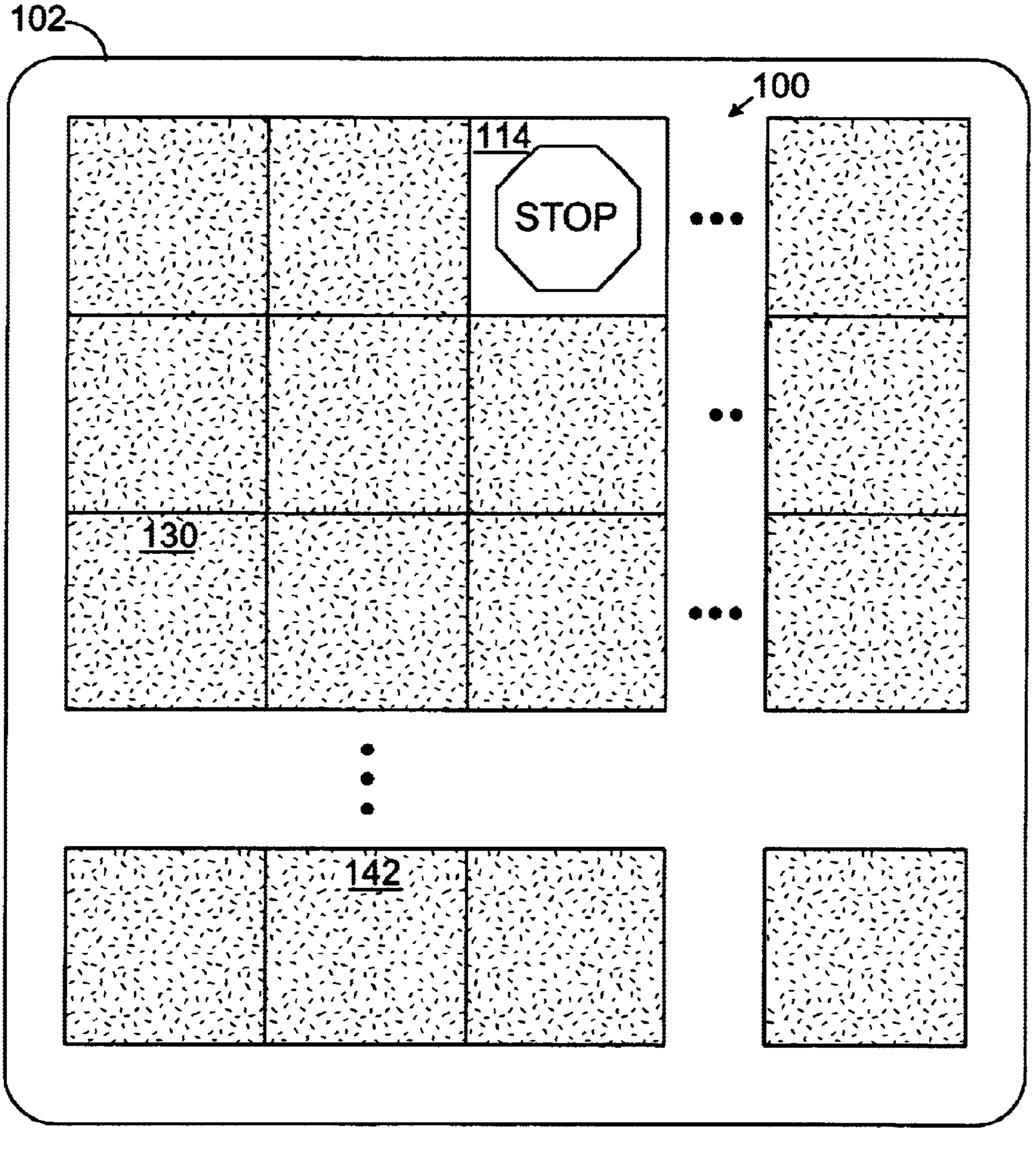


FIG. 1-I

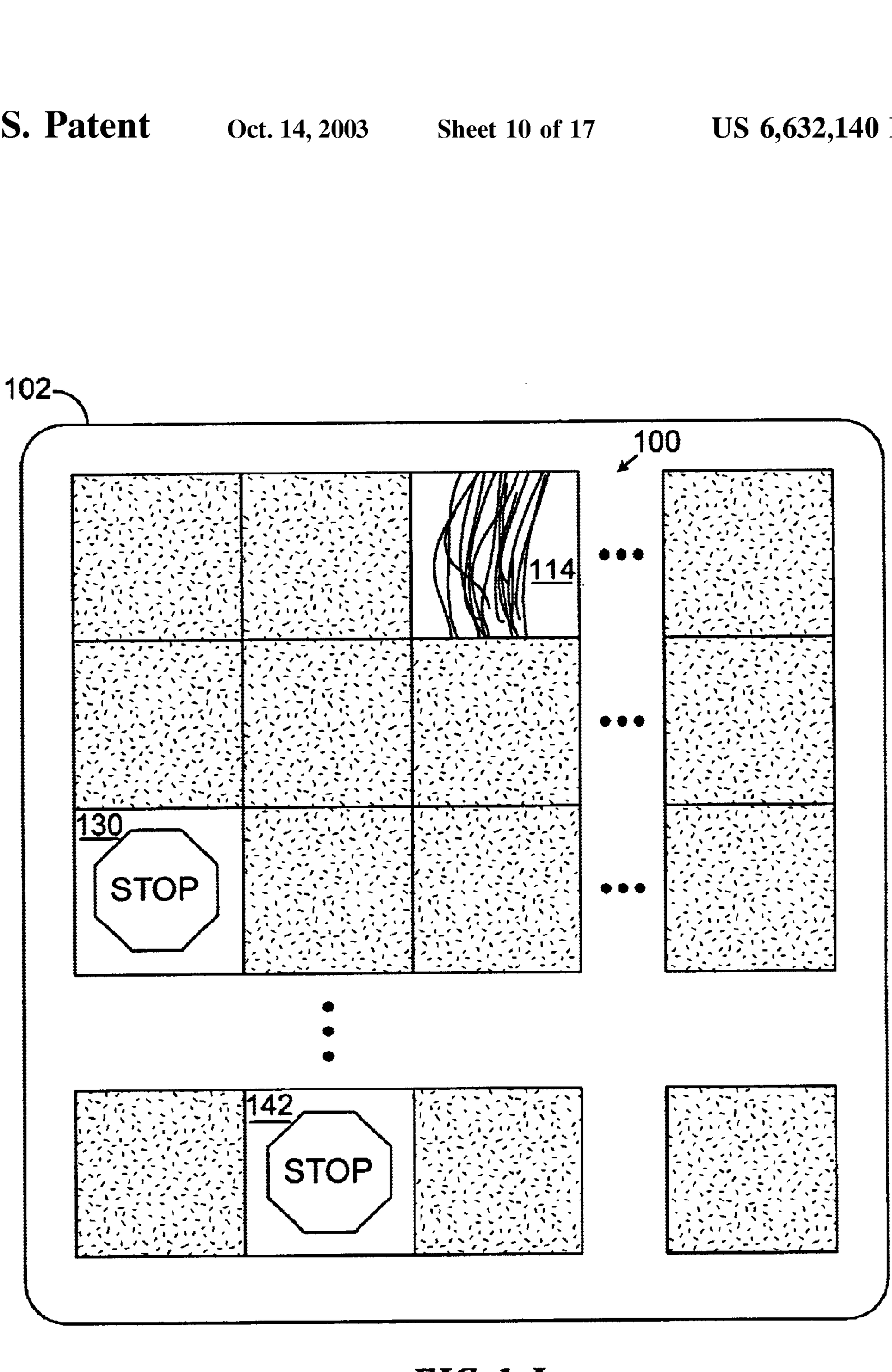


FIG. 1-J

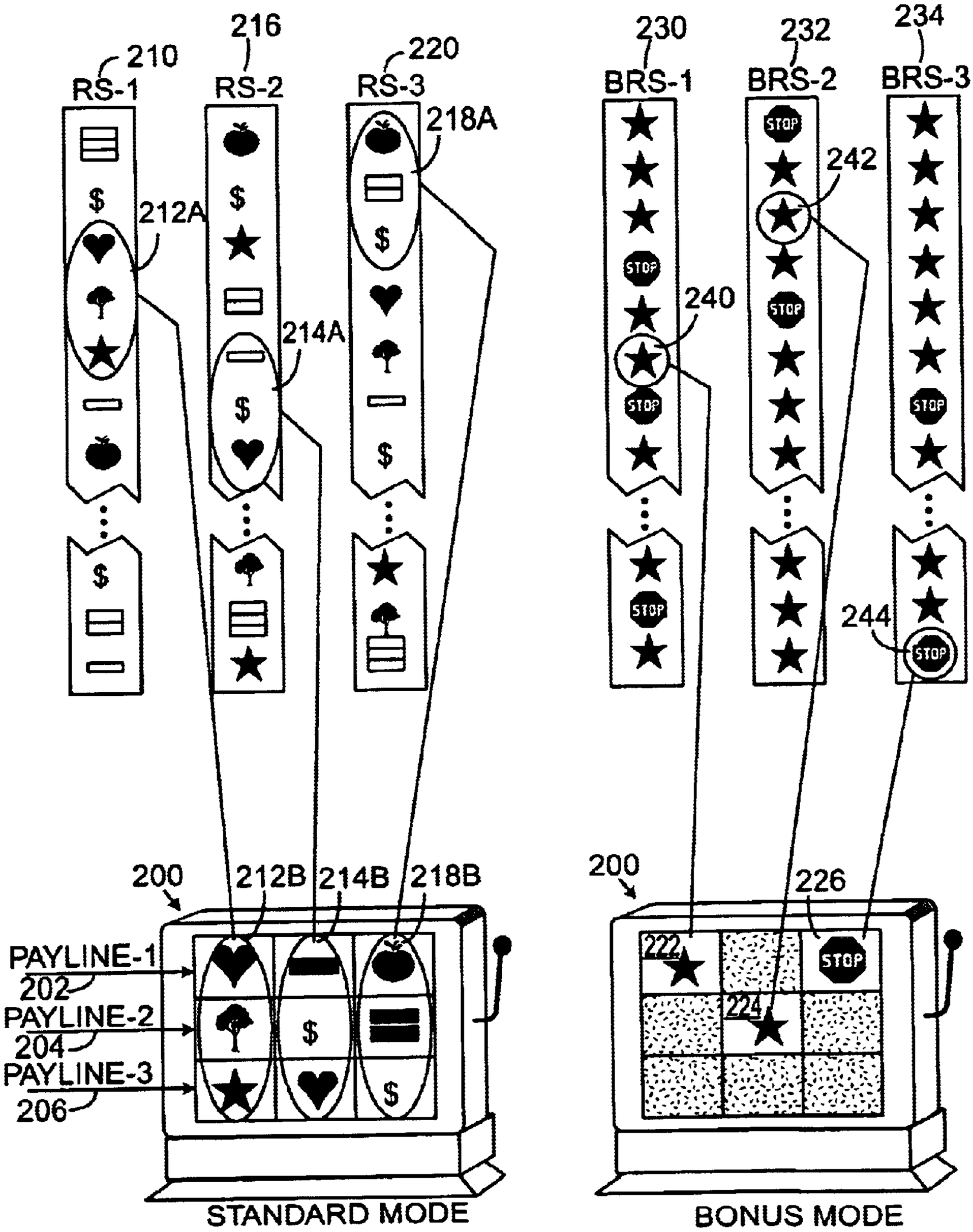
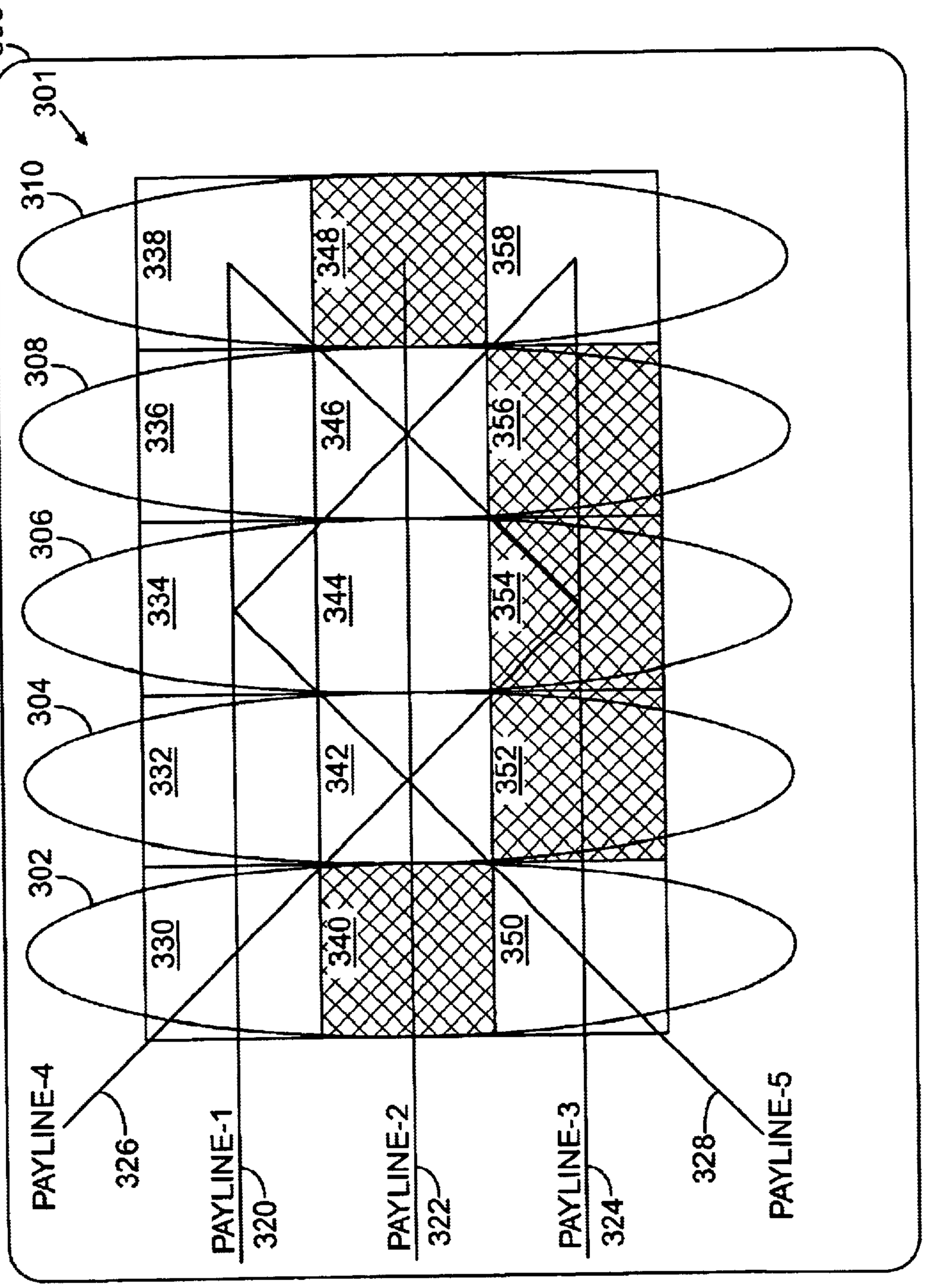

210
RS-1
216
RS-2
220
RS-3
218A
230
BRS-1
232
BRS-2
234
BRS-3
212A
214A
240
242
244
STOP
200
212B
214B
218B
PAYLINE-1
202
PAYLINE-2
204
PAYLINE-3
206
222
224
226
STANDARD MODE
BONUS MODE

FIG. 2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308
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302
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358
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346
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342
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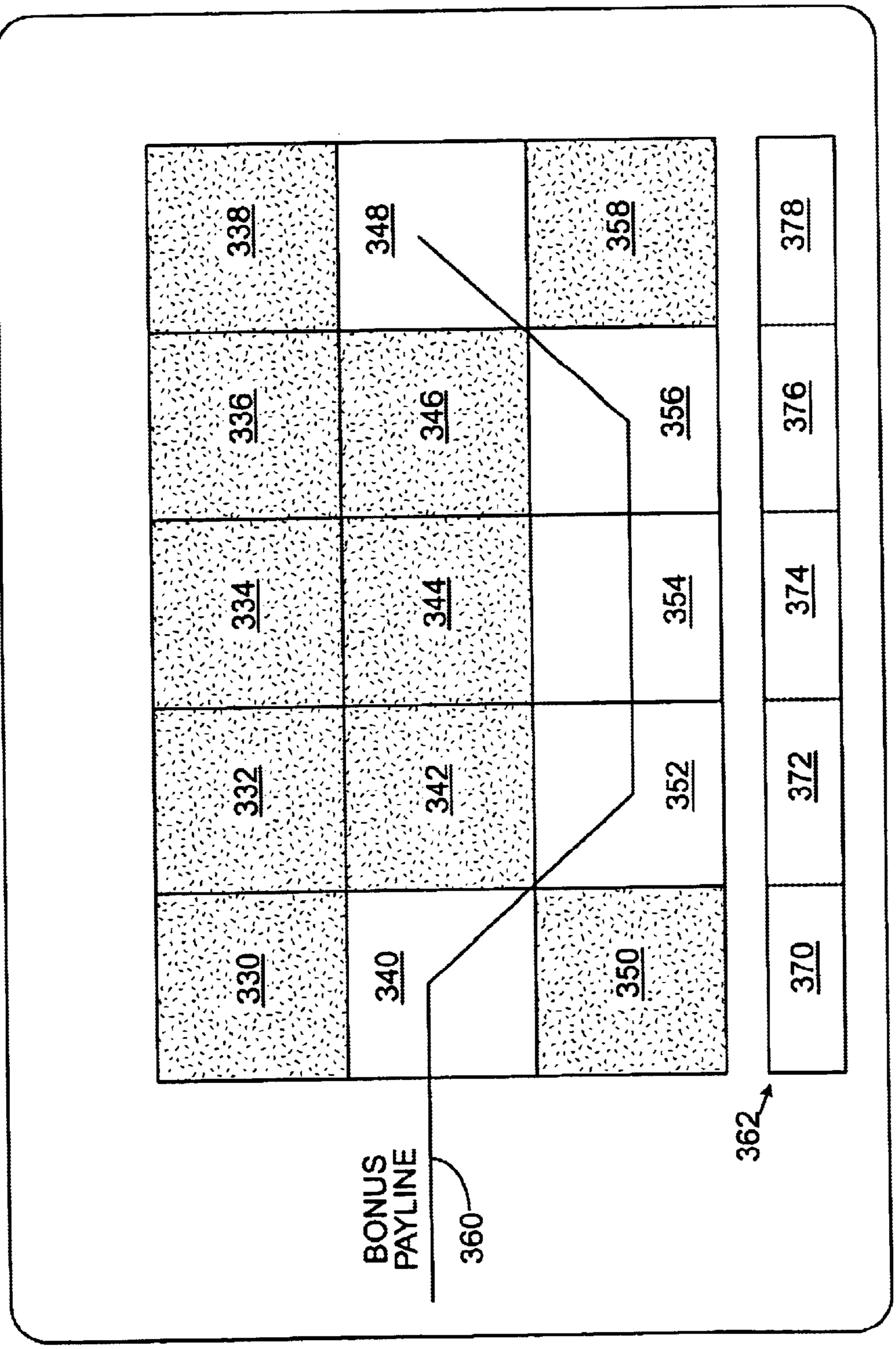
330
340
350
PAYLINE-4
326
PAYLINE-1
320
PAYLINE-2
322
PAYLINE-3
324
328
PAYLINE-5

FIG. 3A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372
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362
BONUS PAYLINE
360

FIG. 3B

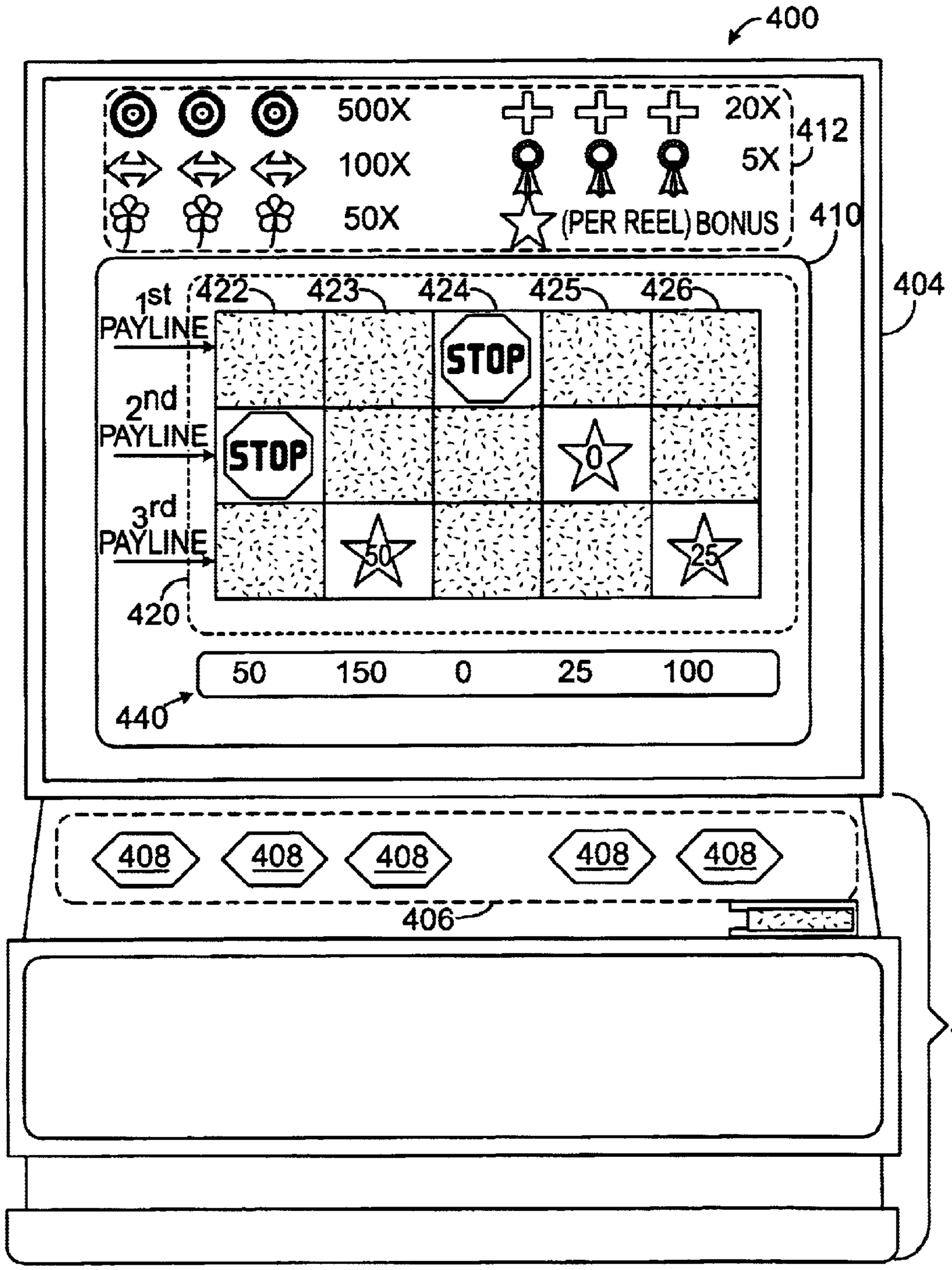
400
500X
100X
50X
20X
5X
(PER REEL) BONUS
412
410
404
422
423
424
425
426
1st PAYLINE
2nd PAYLINE
3rd PAYLINE
STOP
STOP
0
50
25
420
50
150
0
25
100
440
408
408
408
408
408
406
402

FIG. 4

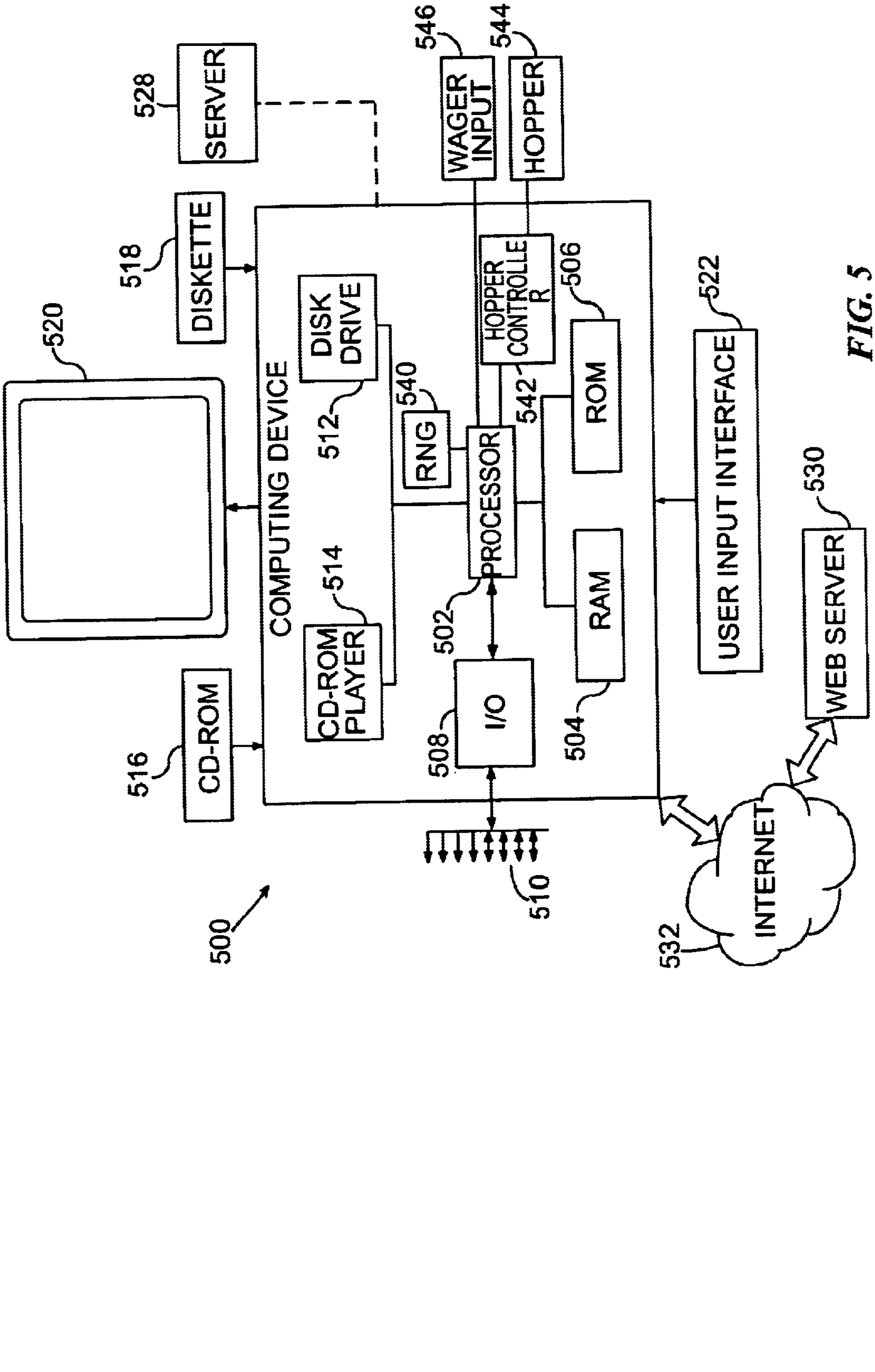
500
520
528
SERVER
518
DISKETTE
DISK DRIVE
512
540
RNG
546
WAGER INPUT
544
HOPPER
HOPPER CONTROLLER
506
542
ROM
522
USER INPUT INTERFACE
530
WEB SERVER
COMPUTING DEVICE
CD-ROM PLAYER
514
PROCESSOR
502
RAM
504
I/O
508
516
CD-ROM
510
INTERNET
532

FIG. 5

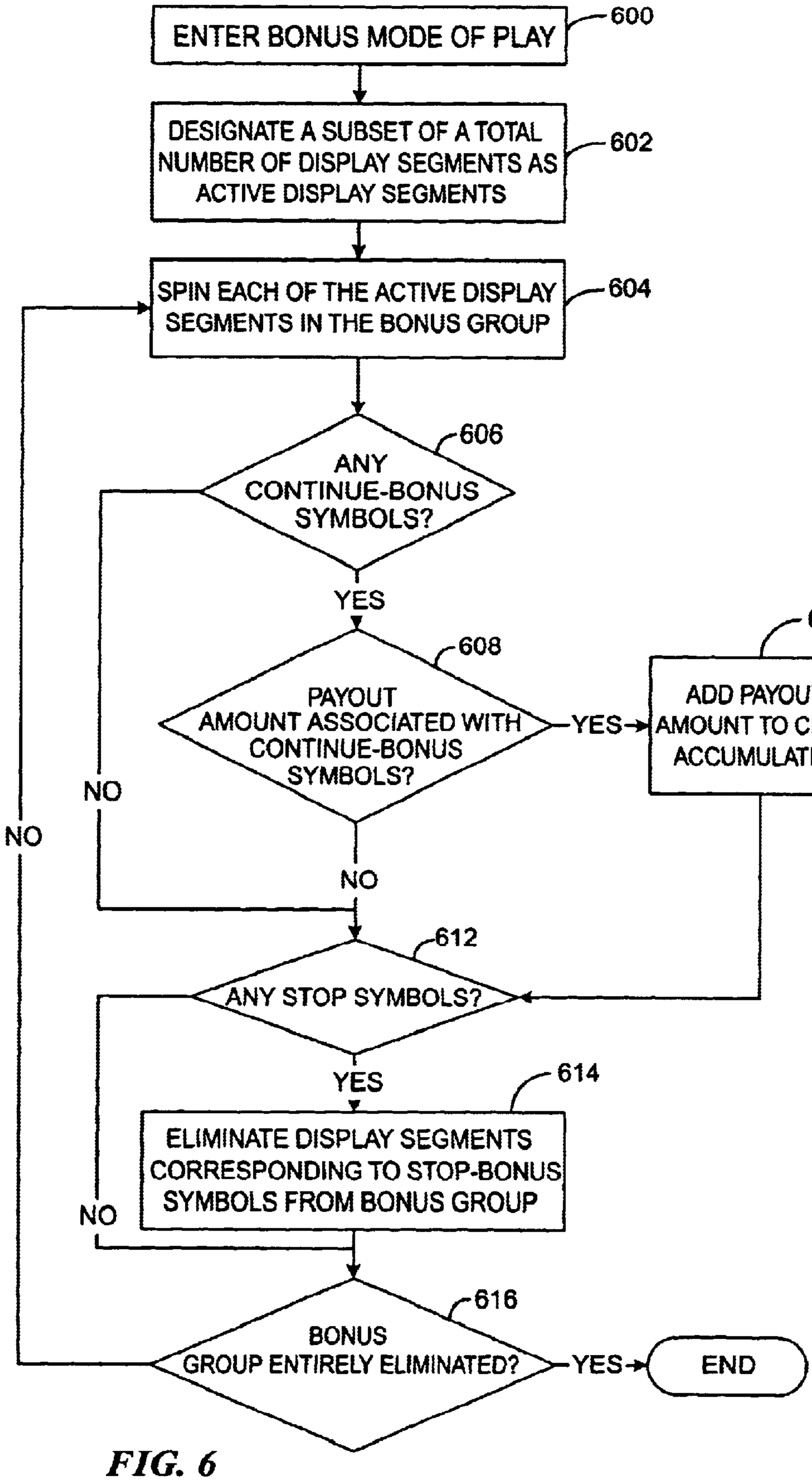
ENTER BONUS MODE OF PLAY
600
DESIGNATE A SUBSET OF A TOTAL NUMBER OF DISPLAY SEGMENTS AS ACTIVE DISPLAY SEGMENTS
602
SPIN EACH OF THE ACTIVE DISPLAY SEGMENTS IN THE BONUS GROUP
604
606
ANY CONTINUE-BONUS SYMBOLS?
YES
608
PAYOUT AMOUNT ASSOCIATED WITH CONTINUE-BONUS SYMBOLS?
YES
610
ADD PAYOUT AMOUNT TO CREDIT ACCUMULATION
NO
NO
NO
612
ANY STOP SYMBOLS?
YES
614
ELIMINATE DISPLAY SEGMENTS CORRESPONDING TO STOP-BONUS SYMBOLS FROM BONUS GROUP
NO
616
BONUS GROUP ENTIRELY ELIMINATED?
YES
END

FIG. 6

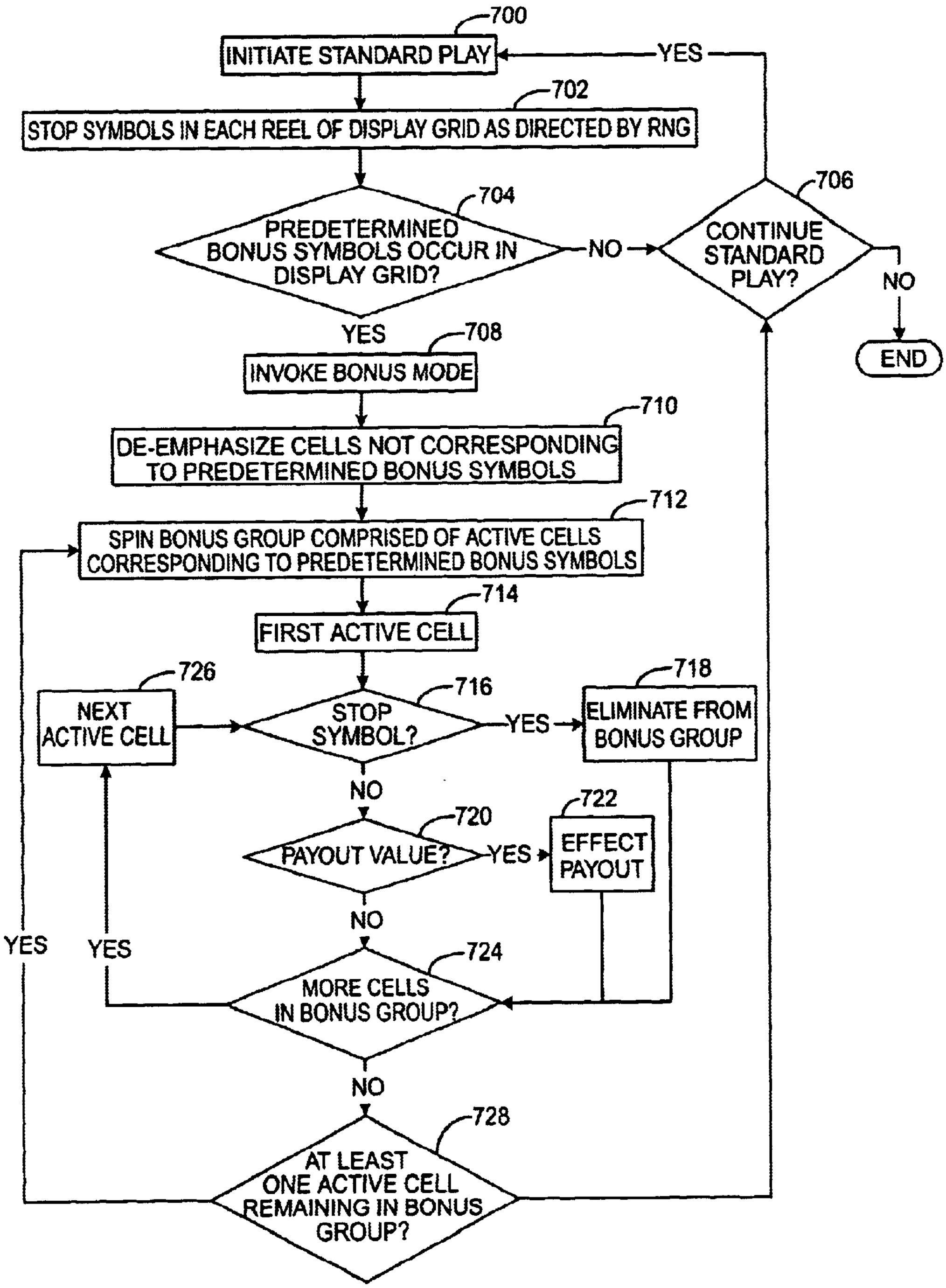
700
INITIATE STANDARD PLAY
YES
702
STOP SYMBOLS IN EACH REEL OF DISPLAY GRID AS DIRECTED BY RNG
704
PREDETERMINED BONUS SYMBOLS OCCUR IN DISPLAY GRID?
NO
706
CONTINUE STANDARD PLAY?
NO
END
YES
708
INVOKE BONUS MODE
710
DE-EMPHASIZE CELLS NOT CORRESPONDING TO PREDETERMINED BONUS SYMBOLS
712
SPIN BONUS GROUP COMPRISED OF ACTIVE CELLS CORRESPONDING TO PREDETERMINED BONUS SYMBOLS
714
FIRST ACTIVE CELL
726
NEXT ACTIVE CELL
716
STOP SYMBOL?
YES
718
ELIMINATE FROM BONUS GROUP
NO
720
PAYOUT VALUE?
YES
722
EFFECT PAYOUT
NO
YES
YES
724
MORE CELLS IN BONUS GROUP?
NO
728
AT LEAST ONE ACTIVE CELL REMAINING IN BONUS GROUP?

FIG. 7

SYSTEM AND METHOD FOR PROVIDING REPEATED ELIMINATION BONUS IN GAMING ACTIVITIES

FIELD OF THE INVENTION

This invention relates in general to gaming systems and processes, and more particularly to a method and apparatus for providing a gaming activity having one or more independent bonus events in corresponding individual display segments, where the independent bonus events are randomly eliminated from the bonus activity while affording collective accumulation of credits.

BACKGROUND OF THE INVENTION

Gaming devices such as slot machines have been in use in the U.S. for over a century. The earliest slot machines originally paid out in cigars and chewing gum. Remnants of the early slot machines are manifested in the traditional "fruit" symbols such as cherries, lemons, oranges, etc., which represent the original flavors of gum. Notwithstanding the similarity of the symbols and reels associated with the slot machines of both today and yesteryear, modern day slot machine implementations are markedly different than their mechanical ancestors. This dramatic implementation disparity results primarily from the advent of computers and video capabilities.

Pure chance gaming devices such as slot machines have proved wildly popular, and in recent years have rivaled and even surpassed their once untouchable table game counterparts. One reason for this popularity is the increase in innovation, and the recognition of the need for human stimulation. While true that a primary motivator for people to play gaming devices is the chance to win monetary or other prizes (in the case of legalized gambling), the intrigue and excitement of playing these newly created machines lures people as well. It is therefore important in the gaming industry that gaming innovations be rolled out to the participating public.

Conventionally, participation in slot machines involves initiating the rotation of multiple reels, and allowing the machine to randomly stop the reel rotation such that associated reel symbols line up a payline. If the symbols on that payline correspond to a predetermined symbol combination, the participant wins an amount corresponding to the particular symbol combination. For multi-lined paylines, a coin or other token may be played for any one or more of the available paylines, and each of the paylines may provide a winning payout. When this occurs, the slot machine pays out according to the payoff table posted on the slot machine. The payoff table informs players of the winning symbol combinations for that machine, and what each combination pays based on the number of coins allocated for the spin. If a winning combination occurs, the machine releases money or tokens into a payout chute, or may award the winning amount onto a credit meter for the player. For example, if a player initially wagered three coins and that player won a high payout, that player may receive fifty coins of the same denomination in return, or may receive fifty credits for continued play.

It is a continual effort in the gaming industry to develop ways to attract and captivate players in playing gaming machines, such as slot games. One such manner of stimulating interest and heightening excitement has been through the use of "bonus" events. Bonus events or games are used to attract and keep players at a gaming machine. A bonus

game is typically an additional gaming reel or machine, or a random selection device, that is enabled by a bonus qualifying signal from an underlying or primary gaming machine. Generally, a predetermined prize-winning combination of symbols in an underlying or primary game may result in the player being awarded one or more bonus games. Often the bonus event has a much higher probability of winning, thereby instilling a great interest by players in being awarded bonus events.

There are various secondary or "bonus" events known in the art. One such bonus event allows the player to depress a bonus spin button to allow the player one or more additional free spins in which a winning payout may be made. Alternatively, additional, discrete bonus reels may be used for the bonus event. In such case, a particular symbol on any one or more of the reels which is stopped on a winning line may result in a winning payout. In some bonus activities, the reels may be controllable in a bonus play, unlike the underlying primary gaming play. For example, the reels may be individually stopped, and/or the reels may be rotated slower to allow the player to attempt to stop the reel such that the prize-winning symbol stops on the win line. In another example, a bonus event for a video slot machine may have a second screen where the player is rewarded with a bonus game, such as allowing the player to pick one of five different items on the second screen, and the selected item reveals a value won by the player. In recent times, bonus events have become quite extravagant, sometimes leading the player through video animations that provide visual and audio entertainment while providing clever ways in which the participant can receive payouts of varying quantities. After engaging in the bonus event, play resumes in the underlying, primary gaming machine.

Of these different types of bonus activities, one type includes those bonus activities where the participant is allowed to actively participate in the bonus event. For example, participants may be allowed to make some sort of selection in order to make the participant feel as though he or she has in some way contributed to the ultimate result. While this may be desirable for some participants, others are more intrigued by the random nature of gaming devices, and may seek an exciting manner of engaging in bonus activities without having to figure out how to best play Such a bonus round. This participant sentiment may become increasingly prevalent where the bonus activity is entirely different from the original, standard play of the game. For example, a standard slot machine may have a bonus activity where an animated series of events takes place, and the participant must try to figure out how to effectively play the bonus round. As some bonus activities become more and more elaborate, some participants may be put off by the inherent complexities.

Another problem with prior art bonus activities is that there is conventionally an understood "end" of the bonus activity that is sure to occur. For example, in a bonus round where a participant is allowed to select six of twenty-four hidden bonus amounts, the bonus round ends when the amounts associated with the six selections have been made and credited to the participant. While it may be exciting for the participant to engage in such a bonus round, it is largely due to the participant's knowledge that the bonus round is likely to produce greater payout amounts than during standard play. However, it would be desirable in the gaming industry to provide bonus activity that is terminated based on random events, where although statistically bound, can theoretically continue indefinitely.

The present invention recognizes the strong desirability of bonus activities in today's gaming industry, and addresses

the aforementioned and other concerns and shortcomings of present bonus activities. The present invention provides gaming participants with an intelligible gaming bonus activity, while providing an exciting, visually-appealing activity having a theoretically unlimited potential for credit accumulations.

SUMMARY OF THE INVENTION

To overcome limitations in the prior art described above, and to overcome other limitations that will become apparent upon reading and understanding the present specification, the present invention discloses a method and apparatus for facilitating participation in a gaming system. The present invention provides a slot game event where certain display segments are continually eliminated from the slot game event, by becoming associated with a predetermined one or more "discontinue symbols." Those display segments that are not eliminated in this fashion continue to remain active, and potentially accumulate credits, until they too are eliminated from the slot game event.

In accordance with one embodiment of the invention, a method is provided for facilitating participation by a player in a slot game, such as that provided via a slot machine or computing device. A display grid having a plurality of active display segments is presented. Symbols are presented in each of the active display segments, such as by randomly selecting symbols and displaying a randomly selected symbol in each of the active display segments. Of these symbols, at least some are discontinue symbols, and the display segments that are associated with a discontinue symbol are deactivated. The presentation of symbols and subsequent deactivation of symbols associated with discontinue symbols continues until all of the active display segments have been deactivated.

In more specific embodiments of the invention, the method may be implemented in a bonus mode of the slot game, which may be invoked upon the occurrence of a predetermined symbol combination in a standard mode of the slot game. Display segments not associated with the bonus mode can then be de-emphasized to distinguish the display segments associated with the bonus mode from those that are not. A lesser number than all of the active display segments may be the trigger point where the bonus event terminates. In other specific embodiments, active display segments that are not deactivated due to a discontinue symbol will remain active due to the presence of a continue symbol in those active display segments. Payout amounts may be associated with any one or more of the continue symbols, such that a participant can keep accumulating credits at each of the active display segments as long as they remain active. In other embodiments, even predetermined discontinue symbols may be given a payout amount, but the display segments associated with these discontinue symbols will not be able to accumulate any further credits until an entirely new bonus round is invoked.

Another aspect of the invention involves a casino gaming apparatus hosting a gaming activity having at least a standard mode of operation and a bonus mode of operation. The gaming apparatus includes a video screen to present a display grid having a plurality of display cells. A user interface is provided to allow the player to participate in the standard mode of operation, and in some embodiments in the bonus mode of operation as well. A processor is used to designate a plurality of the display cells as active display cells in response to a predetermined symbol combination occurring during the standard mode of operation. When in the bonus mode of operation, the processor randomly presents symbols in the active display cells, and deactivates the active display cells associated with a discontinue symbol. The processor, whether automatically or initiated by user input, repeats the random presentation of symbols and deactivation of the display cells associated with the discontinue symbols, until all, or alternatively a predetermined number, of the active display cells have been deactivated.

In accordance with another embodiment of the invention, a method is provided for facilitating participation in a slot game on a slot machine. A display grid having multiple display segments is presented. Virtual reels, that are visible via the display segments, are electronically "spun." Each of the virtual reels includes symbols from a collective symbol set. This spinning action of the virtual reels is terminated, resulting in a random presentation of a symbol from the collective symbol set in each of the display segments. If a bonus event is invoked through determining whether a predetermined symbol combination is presented, then the display segments associated with the symbols of the predetermined symbol combination are distinguished from inactive display segments disassociated with the symbols of the predetermined symbol combination. While in bonus mode, a bonus virtual reel is spun in each of the active display segments. This spinning action of the bonus virtual reels is terminated, resulting in a random presentation of bonus symbols in each of the active display segments. Display segments associated with a stop-bonus symbol are deactivated and thereby eliminated from the rest of that bonus event. The bonus virtual reels continue to be spun, and display segments deactivated, until a predetermined number, such as all, of the active display segments have been deactivated. More particular embodiments include providing credit awards for at least some of the symbols presented in the display segments that are not stop-bonus symbols.

These and various other advantages and features of novelty which characterize the invention are pointed out with particularity in the claims annexed hereto and form a part hereof. However, for a better understanding of the invention, its advantages, and the objects obtained by its use, reference should be made to the drawings which form a further part hereof, and to accompanying descriptive matter, in which there are illustrated and described specific examples of an apparatus in accordance with the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in connection with the embodiments illustrated in the following diagrams.

FIGS. **1**-A through **1**-J illustrate a sequence of events carried out in connection with a slot game in accordance with one embodiment of the invention;

FIG. **1**-J illustrates an example where the eliminated display segments retain an image of the stop-bonus symbol that brought about the respective display segment's elimination;

FIG. **2** is a block diagram illustrating one embodiment in which physical or virtual reel strips are associated with a slot game in the standard and bonus modes in accordance with the invention;

FIGS. **3**-A and **3**-B illustrate an exemplary embodiment of the elimination bonus methodology used in connection with a video display device in accordance with the invention;

FIG. **4** is an embodiment of a casino-style gaming device in which the principles of the present invention may be applied;

FIG. **5** is a block diagram of a representative computing system capable of carrying out operations in accordance with the invention; and

FIGS. **6** and **7** are flow diagrams illustrating representative embodiments of the elimination bonus features in accordance with the present invention.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENTS

In the following description of the invention, reference is made to the accompanying drawings which form a part hereof, and in which is shown by way of illustration the specific embodiment in which the invention may be practiced. It is to be understood that other embodiments may be utilized, as structural and operational changes may be made without departing from the scope of the present invention.

Generally, the present invention is directed to a method and apparatus for facilitating participation in a slot game, such as that played on a slot machine or other computing device. Certain display segments of a display grid are continually eliminated from the slot game event, by becoming associated with a predetermined one or more discontinue symbols. Those display segments that are not eliminated in this fashion continue to remain active, and potentially accumulate credits, until they too are eliminated from the slot game event.

The present invention, as described more fully below, is applicable to a variety of gaming activities that are played on a gaming machine, including slot games such as reel slots and video slots, electronic poker and other electronic card games, keno, bingo, craps, dice, roulette, etc. The present invention is, however, described in large part in the present description in terms of slot machines to provide an understanding of the invention. For example, in the context of slot games/machines, the present invention allows slot game participants to partake in a standard slot game, while having the opportunity to become engaged in a bonus activity according to the present invention. While the invention is particularly advantageous in the context of slot machines, and while a description in terms of slot machines facilitates an understanding of the invention, the invention is equally applicable to other gaming activities of chance as will be readily apparent to those of skill in the art from the description provided herein.

More particularly, an exemplary gaming system in which the principles of the present invention are particularly beneficial includes at least one standard gaming activity, and at least one bonus activity. For example, in the context of slot machines, a standard gaming activity includes the normal slot game in which the participant places a wager, initiates spinning the slot game reels, and collects payouts upon the occurrence of one of a plurality of predetermined winning symbol combinations. A bonus activity is an activity different from the standard gaming activity, which generally only occurs at certain times. In other words, where the standard gaming activity is the gaming activity that is presented to the participant automatically in connection with play of the gaming device, a bonus activity is not automatically presented to the participant. Rather, the bonus activity is generally a special occurrence awarded to the participant for an occurrence resulting from standard gaming play. For example, a bonus event may be awarded to a slot game participant if a resulting symbol combination occurring during standard slot game activity corresponds to a symbol combination determined in advance to result in a bonus event award. Bonus events are typically used to attract and keep players at a gaming machine, and is typically an additional gaming reel or machine, or a random selection device, that is enabled by a bonus qualifying signal from an underlying or primary gaming activity. Generally, a predetermined combination of symbols in an underlying game may result in the player being awarded one or more bonus games. Often the bonus event has a much higher probability of winning, thereby instilling a great interest by players in being awarded bonus events.

As is described more fully below, the present invention provides a repeated bonus activity that, over time, statistically diminishes in potential payout opportunities through individual display segment elimination from the bonus activity. It should be recognized, however, that the principles of the present invention may be utilized in a standard mode of play rather than a bonus mode of play. Those skilled in the art will readily appreciate that the invention may be utilized in a standard mode of play from the description provided herein. While the present invention may be carried out in a standard play mode, an exemplary embodiment of the invention utilizes the present invention in a secondary, or bonus mode, and while embodiments of the invention are largely described herein in connection with such a bonus mode of operation, the invention is not limited thereto.

In order to provide an understanding of the operation of the invention, FIGS. **1**-A through **1**-J illustrate a sequence of events carried out in connection with a slot machine in accordance with one embodiment of the invention. FIG. **1**-A illustrates an example of a slot game grid **100** that may be presented on a slot game display **102**. Different slot games may exhibit a variety of different reel characteristics and display formats. For example, some slot games include a conventional three-reel configuration traditionally used in mechanical-reel slot machines. In a three-reel configuration, three reels each having an associated reel strip of symbols rotate vertically as viewed by the participant. The reels stop at random locations, thereby presenting the participant with one, two, or three paylines of potentially winning symbol combinations, depending on the amount wagered by the participant. In more recent times, this traditional reel display format has changed significantly, largely due to the ability to present electronic reels on a display screen. This has resulted in a variety of different reel formats, including greater quantities of vertically rotating electronic reels, greater numbers of paylines, and paylines that are vertical, diagonal, as well as the traditional horizontal paylines. The present invention is applicable with any reel configuration. Therefore, the slot game grid **100** of FIG.**1**-A is shown as having an indeterminate number of rows and columns, which can accordingly represent an indeterminate number of reels, paylines, and the like.

The slot game grid **100** of FIG. **1**-A includes a number of rows, which may represent different paylines. However, as will be described more fully below, rows do not necessarily correspond to paylines in accordance with the present invention. Each row includes one or more display segments. The first row includes display segments **110**, **112**, **114**, through some predetermined number of display segments represented by display segment **118**. Similarly, a second row includes display segments **120**, **122**, **124** through **128**, and a third row includes display segments **130**, **132**, **134** through **138**. Depending on the number of display segments, rows, paylines, etc. desired, additional rows through the final row are provided, where the final row includes display segments **140**, **142**, **144** through **148**. Thus, FIG. **1**-A is intended to represent a generic slot game grid having any number or combination of display segments.

Referring now to FIG. **1**-B, the slot game grid **100** presented on the display **102** illustrates how symbols ultimately correspond to the display segments. For example, the

slot game state represented in FIG. **1**-B may include at least four rotating reels (e.g., virtual reels), including the reels corresponding to columns **150**, **152**, **154** through **158**. When the reels randomly come to a stop in accordance with a standard mode of slot game play, slot game symbols are presented in each of the display segments as shown in FIG. **1**-B. In some instances, the "symbol" may be a blank symbol as shown in display segments **112** and **128**. Each of the various rows **160**, **162**, **164** through **168** may represent various paylines, where a predetermined combination of symbols in any of the paylines may produce a winning combination and payout during the standard mode of play. Paylines may also be provided in other manners, such as vertically through columns **150**, **152**, **154** through **158** (particularly where each of the symbols in such columns are not in a predetermined reel strip configuration). Paylines may also be made diagonally, or in some other predetermined pattern. The particular manner in which paylines are formed during a standard mode of play is not of particular importance to the present invention.

In accordance with an exemplary embodiment of the present invention, a predetermined pattern, number of symbols, or other predetermined symbol configuration will initiate a secondary mode of play, referred to herein as a bonus mode of play. The bonus mode can be initiated by a certain symbol combination arising on any of the paylines of the slot game grid **100**, or by a certain predetermined symbol combination arising anywhere on the grid **100**. In the example of FIG. **1**-B, a predetermined symbol combination of three cloud symbols initiates the bonus activity. These three cloud symbols are shown in display segments **114**, **130**, and **142**. It should be noted that any predetermined symbol can initiate the bonus activity, as well as any number of such symbols arising (e.g., one, two, etc.) Again, for purposes of illustration, three cloud symbols trigger the bonus mode in the present example.

When the bonus-triggering symbols are presented during the standard mode of play, the bonus mode is initiated. In accordance with one embodiment of the present invention, the display segments **114**, **130**, and **142** corresponding to the bonus-triggering symbols become the display segments to be used in the bonus activity. This can be seen in FIG. **1**-C, where display segments **114**, **130**, and **142** remain "active," but the remaining display segments **110**, **112**, **118**, **120**, **122**, **124**, **128**, **132**, **134**, **138**, **140**, **144**, and **148** temporarily become "inactive." In one embodiment of the invention, these inactive display segments are de-emphasized during the bonus mode of play, such as by graying out these display segments or otherwise providing some other visual manner of distinguishing the inactive and active display segments.

The bonus activity according to one embodiment of the invention includes randomly or pseudo-randomly updating the active display segments **114**, **130**, **142** with bonus symbols that may provide the participant with credits won through the bonus activity. For example, referring to FIG. **1**-D, the bonus activity includes individually re-spinning virtual reels in each of the display segments **114**, **130**, **142**. In accordance with one embodiment of the invention, the bonus mode is automatically initiated upon the bonus-triggering event as described in connection with FIG. **1**-C. Alternatively, the participant may be notified visually, audibly, or otherwise that the bonus mode is available, thereby prompting the participant to initiate the spinning of the active display segments **114**, **130**, **142** through a user interface.

The bonus mode according to the present invention utilizes a random number generator (RNG) to randomly (or pseudo-randomly) determine which bonus symbols will be presented in the display segments **114**, **130**, **142** during the bonus activity. The degree in which the symbols are selected "randomly" may be configured as desired, such as by controlling the degree in which the symbol is randomly selected through desired statistical probability outcomes. FIG. **1**-E illustrates the display segments **114**, **130**, **142** after the display segment "spinning" is stopped pursuant to the RNG. The ultimately resulting symbols that are randomly presented in each of these active display segments may be common to the symbols used during the standard mode of play, or alternatively may be a different set of symbols used just during the bonus mode of play. In the illustrated embodiment, the bonus symbols are different than those used in the standard mode of play, and include stop-bonus symbols such as the stop-sign symbol in display segment **130**, as well as continue-bonus symbols such as the star symbols in display segments **114** and **142**.

The continue-bonus symbols associated with display segments **114** and **142** result in continued bonus activity at these display segments. An amount value, corresponding to a number of coins or credits won, may be displayed in connection with the continue-bonus symbols. For example, the star continue-bonus symbol at display segment **114** indicates that one hundred credits were randomly awarded, and the star continue-bonus symbol at the display segment **142** indicates that twenty-five credits were awarded. Thus, this particular bonus round of the entire bonus activity resulted in a total of one hundred and twenty-five credits being awarded to the participant. The continue-bonus symbols may be associated with positive credit/coin awards, i.e., a credit award greater than zero. Alternatively, the continue-bonus symbols may be associated with no credits/coins (i.e., a null credit award), but that display segment will remain active for further bonus activity. In another embodiment, the continue-bonus symbols may even be associated with negative credits, such that credit accumulations are taken away from the participant, although the display segment will remain active for anticipated further credit accumulations. In still further embodiments, a plurality of matching continue-bonus symbols may be required in order to obtain a particular credit value.

Each time a continue-bonus symbol is presented during the bonus activity, whether or not associated with a credit/coin award, the corresponding display segment remains active, resulting in further chances to accumulate credits/coins via that display segment. On the other hand, stop-bonus symbols such as the stop symbol in display segment **130** are deactivated, and therefore eliminated from further activity during this particular round of play. As will be described in greater detail, the bonus mode according to the present invention may theoretically continue indefinitely, as the random selection of continue-bonus symbols can repeatedly be presented in the display segments during the bonus mode. Thus, there is no scheduled end to the bonus round, but rather, the bonus activity ends when all active display segments have been eliminated from the bonus round through deactivation of the corresponding display segments upon random receipt of a stop-bonus (i.e., discontinue) symbol. This is described in greater detail in FIGS. **1**-F through **1**-J below.

Referring next to FIG. **1**-F, the non-eliminated, active display segments **114**, **142** re-spin due to a continue-bonus symbol having been previously associated with these display segments. Display segment **130**, on the other hand, has been de-emphasized due to its earlier elimination resulting from the stop-bonus symbol being presented in display segment

130. It should be noted that in one embodiment of the invention, one or more of the active display segments **114**, **142** having a continue-bonus symbol may be "held" for use in the next spin.

Upon completion of the spinning of the remaining display segments **114**, **142**, a random symbol presentation is presented in the active display segments **114**, **142** as shown in FIG. **1**-G. In this example, the ultimately resulting bonus symbols that are randomly presented in these active display segments include a continue-bonus symbol (e.g., star symbol) in display segment **114**, and a stop-bonus symbol (e.g., stop-sign symbol) in display segment **142**. In the illustrated example, the continue-bonus symbol at display segment **114** has an associated credit award of fifty credits, thereby adding an additional fifty credits to the participant's accumulated credit total. As previously described, display segment **114** remains active for further bonus activity due to its association with a continue-bonus symbol. On the other hand, the stop-bonus symbol associated with display segment **142** results in display segment **142** being deactivated and eliminated from further bonus activity. It should be recognized that stop-bonus symbols, as with continue-bonus symbols, may be associated with a credit award even though the associated display segment is eliminated from further involvement with that particular bonus activity.

This process of repeatedly eliminating the availability of display segments during the bonus activity continues, as shown in FIG. **1**-H. FIG. **1**-H shows that the remaining active display segments, display segment **114** in this example, again provide a random selection process of a new bonus symbol, as illustrated by the display segment spinning action of display segment **114**. The previously-eliminated display segment **142** is optionally de-emphasized. When a bonus symbol has been randomly selected, it is presented in display segment **114** as shown in FIG. **1**-I. In this example, the bonus symbol is, by random chance, a stop-bonus symbol. However, the symbol could have been a continue-bonus symbol, thereby awarding the participant with any associated credit value, and maintaining the display segment **114** as an active display segment. Because of the random nature of the presentation of continue-bonus and stop-bonus symbols, the bonus activity has no set termination. However, in other embodiments of the invention, a maximum number of spins or other termination point may be defined.

The display segments that have been eliminated from the bonus activity may be, as previously described, de-emphasized, as the original inactive display segments were. Alternatively, the display segments that have been eliminated from the bonus activity may retain a visual cue to identify that display segment as a once-active display segment associated with the bonus activity. FIG. **1**-J illustrates such an example, where the elimination of display segments **130**, **142** retain an image of the stop-bonus symbol that brought about the respective display segment's elimination. Other images can alternatively be provided in these eliminated display segments as well.

It should be noted that any predetermined number of symbols, in any predetermined arrangement, can be used to initiate the bonus activity in accordance with the invention. Further, an exemplary embodiment of the invention utilizes the same display segments for purposes of the bonus round that initially gave rise to the bonus round. For example, display segments **114**, **130**, and **142** initially gave rise to the bonus round in the example of FIGS. **1**-A through **1**-I, and these same display segments were therefore used in the bonus activity. Alternatively, a different display segment arrangement could be used for the bonus round, but implementing the repeated elimination process described above. Thus, once the bonus activity is initiated, any predetermined arrangement and/or number of display segments could be used in the elimination bonus activity described herein. For example, even where the display segments **114**, **130**, **142** originally give rise to the bonus activity, an alternative embodiment includes utilizing, for example, the top row **160** of the slot game grid as the relevant display segments.

In one embodiment of the invention, the standard mode of play may implement a first set of physical or electronic (e.g., virtual) reel strips, and the bonus mode of play may implement a different set of reel strips, where each reel strip provides a symbol set. Further, the standard mode of play may implement physical or virtual reel strips where multiple sequential symbols of the reel strip is provided on multiple paylines during the standard mode of play. For example, referring to FIG. **2**, a slot machine **200** is shown in the standard mode of play. In this example, the standard mode includes three paylines, shown as payline-**1** **202**, payline-**2** **204**, and payline-**3** **206**. The reel strips associated with the standard mode of play may be provided as physical strips having symbols imprinted thereon, such that the stopping point of the reel strip determines which symbols will fall on the paylines **202**, **204**, **206**. For example, a first reel strip, RS-**1** **210** includes a series of symbols. This reel strip, when stopped, presents a group of symbols on the paylines **202**, **204**, **206**. More particularly, the symbol group **212**A is presented across payline-**1** **202**, payline-**2** **204**, and payline-**3** **206** as seen on the slot machine **200** as symbol group **212**B. Analogously, the symbol group **214**A of RS-**2** **216** is presented across paylines **202**, **204**, **206** as symbol group **214**B on the slot machine **200**; and the symbol group **218**A of RS-**3** **220** is presented across paylines **202**, **204**, **206** as symbol group **218**B on the slot machine **200**. The same may hold true for virtual reel strips, where the order of the symbols on the virtual reel strip may be carried over to the order of the symbols presented across the paylines.

The operation of the reel strips, whether physical or virtual, may change in accordance with one embodiment of the invention. As shown in FIG. **2**, the slot machine **200** de-emphasizes those display segments that are not "active" when entering the bonus mode of play. Three display segments **222**, **224**, and **226** remain active in this example. The same reel strips used during standard play may be used in the bonus mode, however, in the illustrated embodiment a new set of bonus reel strips BRS-**1** **230**, BRS-**2** **232**, and BRS-**3** **234** are used. In the bonus mode, one embodiment of the invention involves providing a reel strip **230**, **232**, **234** for each of the individual display segments **222**, **224**, **226** that is active in the bonus mode of play. Thus, bonus reel strip BRS-**1** **230** will "spin" in display segment **222**, bonus reel strip BRS-**2** **232** will spin in display segment **224**, and bonus reel strip BRS-**3** **234** will spin in display segment **226**. In this manner, each of the individual active display segments **222**, **224**, **226** operates as a discrete, self-sufficient bonus payline. As can be seen, a single symbol such as continue-bonus symbols **240** and **242** from bonus reel strips **230** and **232** respectively may ultimately be presented in display segments **222** and **224**. Similarly, a stop-bonus symbol **244** from bonus reel strip **234** may ultimately be presented in display segment **226**.

It should be noted that the particular reel strips, number of symbols, and type of symbols presented on the reel strips **230**, **232**, **234** may differ from one embodiment to the next. For example, each of the reel strips can include a different symbol set altogether, rather than having symbols from a common symbol set such as illustrated in FIG. **2**. Further, the

symbols associated with any of the reel strips may change. For example, after each "spin" in the bonus mode one or more of the reel strips can change symbols, add symbols, remove symbols, etc. In a more particular example, each time a display segment has a continue-bonus symbol associated therewith, one or more of the continue-bonus symbols on that reel strip may be removed, to raise the chance that a stop-bonus symbol will occur.

During bonus mode, the active display segments, such as display segments **222**, **224**, and **226**, thus operate as individual paylines in one embodiment of the invention. In alternative embodiments, two or more active display segments may present symbols from a common reel strip. For example, in the case of electronic reel strips requiring no physical relationship between the symbols, the single bonus reel strip **230** may provide the symbols for each of the display segments **222**, **224**, and **226** during the bonus activity. However, in such case, each of the active display segments **222**, **224**, **226** would appear, and spin, as individual paylines. Therefore, such an embodiment is best suited for video display segments where the reel strip is a "virtual" reel strip generated electronically, and therefore does not require an actual, physical reel strip.

As described above, one embodiment of the invention involves operating each of the "active" display segments individually such that the resulting symbol in each active display segment is not reliant on symbols in other display segments to determine a winning result. For example, a star symbol in active display segment **222** by itself may generate a winning payout, where the stop symbol in active display segment **226** by itself may cause that particular display segment to be eliminated from the bonus activity. In such an embodiment, the symbol presented in the active display segment provides all the information necessary to determine whether that display segment will continue to be active, whether it will provide a payout amount, or whether that display segment will become inactive due to its elimination. Other actions may also be taken from these single symbols, as different symbols may represent different actions. One such example is that a certain symbol causes an auxiliary action, such as doubling the payout of another continue-symbol in another display element presented during bonus mode.

Although the active display elements operate as individual paylines, the collection of active display elements create a "bonus group" of active display elements. The active display elements **222**, **224**, and **226** may thus be considered as an active bonus group, which remains operative in the bonus mode of play until all of the individual display segments of the bonus group have been eliminated.

FIGS. **3**-A and **3**-B provide a more particular example of the elimination bonus methodology in accordance with the invention. In this example, a video display screen **300** is provided. The video display screen may be implemented in a variety of manners, including electronically represented with outputs shown on conventional electronic displays, such as a liquid crystal displays (LCD), dot matrix, plasma, CRT, LED, electro-luminescent display, or generally any type of video display known in the art.

The display screen of the illustrated embodiment includes a grid **301** comprised of a plurality of video display segments. In one embodiment, the grid includes five virtual reels **302**, **304**, **306**, **308**, and **310** that rotate vertically. However, in a video display environment, the electronic reels need not rotate vertically, but may rotate horizontally along rows, or each display segment may rotate independently of other display segments. In this example it is assumed that the electronic reels rotate vertically and in groups defined by reels **302**, **304**, **306**, **308**, and **310**.

In the standard mode of play, the reels **302**, **304**, **306**, **308**, and **310** are electronically rotated. The reels are randomly stopped pursuant to operation of a random number generator (RNG) or other random operation engine. Winning symbol combinations may be presented along a number of different paylines. The example of FIG. **3**A includes five paylines, shown as payline-**1 320**, payline-**2 322**, payline-**3 324**, payline-**4 326**, and payline-**5 328**. Additional paylines could be implemented, such as along columns, particularly where the standard mode of play randomly selects symbols at each display segment rather than providing a continuous reel strip for each column. In this example, payline-**1 320** includes display segments **330**, **332**, **334**, **336**, and **338**. Payline-**2 322** includes display segments **340**, **342**, **344**, **346**, and **348**. Payline-**3 324** includes display segments **350**, **352**, **354**, **356**, and **358**. Payline-**4 326** includes display segments **330**, **342**, **354**, **346**, and **338**. Finally, payline-**5 328** includes display segments **350**, **342**, **334**, **346**, and **358**.

While the participant may win credits by obtaining predetermined symbol combinations along paylines **320**, **322**, **324**, **326**, **328** during the standard mode of play, the present invention also includes a bonus mode of play. Any predetermined symbol criteria may be used to invoke the bonus mode of play. For example, the criteria may be one or more predetermined symbols stopping at predetermined locations in the display segment grid **301**. An example is at least one predetermined symbol stopping in each of the reels **302**, **304**, **306**, **308**, **310**. Another exemplary criteria is a predetermined number of a predetermined symbol, regardless of where on the grid **301** these predetermined symbols present themselves. For example, the criteria may be that three star symbols present themselves on the grid **301**, and if at least three star symbols present themselves, they become the "bonus group" used in the bonus mode of play. As will be readily apparent to those skilled in the art from the foregoing description, a wide variety of options may be implemented to invoke the bonus mode in accordance with the invention.

For purposes of discussion, it is assumed that the criteria used in invoke the bonus mode is that a predetermined symbol must present itself in each of the reels **302**, **304**, **306**, **308**, **310**. The example of FIG. **3**A illustrates that such predetermined symbols presented themselves during standard play at display segments **340**, **352**, **354**, **356**, and **348**. This invokes the bonus mode of play.

FIG. **3**B illustrates an exemplary embodiment of the display screen **300** when the bonus mode is invoked. In this embodiment, all display segments **340**, **352**, **354**, **356**, **348** in which the predetermined symbol was presented during standard play become the active display segments of the bonus group **360** in the bonus mode of play. In one embodiment, the remaining display segments are de-emphasized or otherwise distinguished from the bonus group as shown in FIG. **3**B. At this point, the bonus activity may automatically begin, or alternatively may be initiated by the participant via a user interface. The bonus activity then continues as previously described in connection with FIGS. **1**-A through **1**-I.

The display screen **300** also includes a bonus payout bar **362**. The bonus payout bar **362** provides payout subtotals of predetermined active display segments of the bonus group **360**. In the illustrated example, the bonus payout bar **362** is configured to provide payout subtotals for each active display segment, such that bonus payout bar sections **370**, **372**,

374, 376, and 378 provide subtotal payout accumulations for display segments 340, 352, 354, 356, and 348 respectively. For example, if display segment 340 produces three continue-bonus symbols each having a payout value of twenty-five during three rounds of bonus activity, the bonus payout bar section 370 will reflect a subtotal accumulation of seventy-five credits. This subtotal accumulation will continue until each of the display segments of the entire bonus group has been eliminated through stop-bonus symbols.

FIG. 4 is an embodiment of a casino-style gaming device in which the principles of the present invention may be applied. Many traditional casino table games may be provided in a "video game" available via a casino-style gaming device shown in FIG. 4. For purposes of explanation, the description of the gaming device is FIG. 4 is provided in terms of a slot machine 400. However, the present invention is analogously applicable to other casino-style games having the ability to include at least one bonus activity.

The slot machine 400 is a structure including at least a computing system, a housing, and a display. The housing includes a base 402 and a display device 404 to allow the slot machine 400 to be a self-supported, independent structure. The base 402 includes structure supporting the slot machine 400, and also includes a user interface 406 to allow the user to control and engage in play of the slot machine 400. The particular user interface mechanisms associated with user interface 406 is dependent on the type of gaming machine. For example, the user interface 406 may include one or more buttons, switches, joysticks, levers, pull-down handles, trackballs, voice-activated input, or any other user input system or mechanism that allows the user to play the particular gaming activity. The user input 406 allows the user to enter coins or otherwise obtain credits through vouchers, tokens, credit cards, etc. Various mechanisms for entering such vouchers, tokens, credit cards, coins, etc. are known in the art. For example, coin/token input mechanisms, card readers, credit card readers, smart card readers, punch card readers, and other mechanisms may be used to enter wagers. It is through the user input 406 that the user can initiate the standard mode of play, and may optionally control certain aspects of the bonus mode of play. In the case of a slot machine, the user input may include a plurality of buttons, e.g., button 408, which allow the user to enter a number of credits to play, identify the number of paylines in which to participate, cash out, automatically bet the maximum amount and paylines, etc. It should be recognized that a wide variety of other user interface options are available for use in connection with the present invention, including pressing a button on a gaming machine, touching a segment of a touch-screen, entering text, entering voice commands, or other known user entry methodology. The particular user interface mechanism employed is not relevant to the present invention.

The display device 404 includes a display screen 410. The display device may take on a variety of forms depending on what type of presentation is to be provided. For example, a slot game area 420 is provided where the standard slot gaming activity is displayed. In this example, the standard slot gaming activity includes five video reels 422, 423, 424, 425, and 426, and three paylines depicted as the 1^{st} payline 428, the 2^{nd} payline 430, and the 3^{rd} payline 432. The display segments occur at the intersections of each video reel and payline. Another presentation that may be displayed on the display screen 410 is the bonus payout bar 440, which may optionally be displayed only during the bonus mode of play.

Also associated with the display device 404 is an optional winning guide area 412, where information associated with the potential winning symbol combinations of the standard slot game activity may be presented. This area may also provide an indication of the requisite symbols, symbol combinations, symbol locations, etc. that are required to invoke the bonus mode in accordance with the invention. This information may be part of the display screen 410, or alternatively may be separate from the display screen 410 and provided directly on a portion of the display device 404 structure itself. For example, a backlit colored panel may be used as the winning guide area 412.

The gaming machines described in connection with the present invention may be independent casino gaming machines, such as slot machines or other special purpose gaming kiosks, video games, or may be computing systems operating under the direction of local gaming software and/or remotely-provided software such as provided by an application service provider (ASP). The casino gaming machines utilize computing systems to control and manage the gaming activity. An example of a representative computing system capable of carrying out operations in accordance with the invention is illustrated in FIG. 5.

Hardware, firmware, software or a combination thereof may be used to perform the various gaming functions, display presentations and operations described herein. The functional modules used in connection with the invention may reside in a gaming machine as described, or may alternatively reside on a stand-alone or networked computer. The computing structure 500 of FIG. 5 is an example computing structure that can be used in connection with such electronic gaming machines, computers, or other computer-implemented devices to carry out operations of the present invention.

The example computing arrangement 500 suitable for performing the gaming and bonus group elimination functions in accordance with the present invention typically includes a central processor (CPU) 502 coupled to random access memory (RAM) 504 and some variation of read-only memory (ROM) 506. The ROM 506 may also be other types of storage media to store programs, such as programmable ROM (PROM), erasable PROM (EPROM), etc. The processor 502 may communicate with other internal and external components through input/output (I/O) circuitry 508 and bussing 510, to provide control signals, communication signals, and the like.

Chance-based gaming systems such as slot machines, in which the present invention is applicable, are governed by random numbers and processors. Electronic reels are used to display the result of the digital reels which are actually stored in computer memory and "spun" by a random number generator (RNG). RNGs are well-known in the art, and may be implemented using hardware, software operable in connection with the processor 502, or some combination of hardware and software. In accordance with generally known technology in the field of slot machines, the processor 502 associated with the slot machine, under appropriate program instruction, can simulate the vertical rotation of multiple reels. Generally, the RNG continuously cycles through numbers, even when the machine is not being played. The slot machine selects, for example, three random numbers. The numbers chosen at the moment the play is initiated are typically the numbers used to determine the final outcome, i.e., the outcome is settled the moment the reels are spun. The resulting random numbers are generally divided by a fixed number. This fixed number is often thirty-two, but for slot machines with large progressive jackpots it may be even

greater. After dividing, the remainders will be retained. For example, if the divisor was one-hundred twenty-eight, the machine would have three remainders ranging from zero to one-hundred twenty-seven. The remainders may be considered as stops on virtual reels. If the divisor was one-hundred twenty-eight, then the virtual reels would each have one-hundred twenty-eight stops with each stop being equally likely. Each stop on the virtual reel may be mapped to a stop on an actual reel or displayed reel image. These reel images may then be displayed on the display **520**. The present invention is operable using any known RNG, and may be integrally programmed as part of the processor **502** operation, or alternatively may be a separate RNG controller **540**. RNGs are well known in the art, and any type of RNG may be implemented for the standard mode of play and/or the bonus mode of play in accordance with the invention.

The computing arrangement **500** may also include one or more data storage devices, including hard and floppy disk drives **512**, CD-ROM drives **514**, and other hardware capable of reading and/or storing information such as DVD, etc. In one embodiment, software for carrying out the standard and bonus gaming operations in accordance with the present invention may be stored and distributed on a CD-ROM **516**, diskette **518** or other form of media capable of portably storing information. These storage media may be inserted into, and read by, devices such as the CD-ROM drive **514**, the disk drive **512**, etc. The software may also be transmitted to the computing arrangement **500** via data signals, such as being downloaded electronically via a network, such as the Internet. Further, as previously described, the software for carrying out the functions associated with the present invention may alternatively be stored in internal memory/storage of the computing device **500**, such as in the ROM **506**. The computing arrangement **500** is coupled to the display **520**, which represents a display on which the gaming activities in accordance with the invention are presented. The display **520** merely represents the "presentation" of the video information in accordance with the invention, and may be any type of known display or presentation screen, such as LCD displays, plasma display, cathode ray tubes (CRT), etc. Where the computing device **500** represents a stand-alone or networked computer, the display **520** may represent a standard computer terminal or display capable of displaying multiple windows, frames, etc. Where the computing device is embedded within an electronic gaming machine, such as slot machine **400** of FIG. **4**, the display **520** corresponds to the display screen **410** of FIG. **4**. A user input interface **522** such as a mouse or keyboard may be provided where the computing device **500** is associated with a standard computer. An embodiment of a user input interface **522** is illustrated in connection with an electronic gaming machine **400** of FIG. **4** as the various "buttons" **408**. Other user input interface devices include a keyboard, a mouse, a microphone, a touch pad, a touch screen, voice-recognition system, etc.

The computing arrangement **500** may be connected to other computing devices or gaming machines, such as via a network. The computing arrangement **500** may be connected to a network server **528** in an intranet or local network configuration. The computer may further be part of a larger network configuration as in a global area network (GAN) such as the Internet. In such a case, the computer accesses one or more web servers **530** via the Internet **532**.

Other components directed to slot machine implementations include manners of gaming participant payment, and gaming machine payout. For example, a slot machine including the computing arrangement **500** may also include a hopper controller **542** to determine the amount of payout to be provided to the participant. The hopper controller may be integrally implemented with the processor **502**, or alternatively as a separate hopper controller **542**. A hopper **544** may also be provided in slot machine embodiments, where the hopper serves as the mechanism holding the coins/tokens of the machine. The wager input module **546** represents any mechanism for accepting coins, tokens, coupons, bills, credit cards, smart cards, membership cards, etc. for which a participant inputs a wager amount.

FIG. **6** is a flow diagram illustrating one embodiment of the elimination bonus features in accordance with the present invention. In one embodiment of the invention, the display segment elimination features of the invention are implemented in connection with a bonus activity. The bonus mode of play is entered **600**. A subset of all display segments on the display are designated as "active" display segments, as shown at block **602**. The active display segments may be presented on any predetermined subset of the entire display segment grid. For example, the active display segments may be presented on a particular grid row, grid column, or other grid pattern. In one embodiment, the display segments that are deemed "active" are those that correspond to the symbols during the standard mode of play that gave rise to the bonus mode. For example, if three predetermined symbols occur during the standard mode of play that invoke the bonus mode, then those corresponding display segments become the active display segments during the bonus activity.

Each of the active display segments may be considered part of a "bonus group." As shown at block **604**, each of the active display segments of the bonus group are subjected to an electronic "spin," similar to the manner in which reels are spun in the standard mode slot game. In one embodiment, each of the active display segments is an independent payline, such that the symbol occurring in each active display segment determines, independent of the other display segments, the result of that display segment single-symbol payline. The RNG randomly stops the spinning activity in each of the active display segments, and it is determined **606** whether any continue-bonus symbols are presented in the bonus group. If not, it is determined whether the bonus group includes any stop symbols **612**. However, some or all of the continue-bonus symbols may have a payout value associated therewith, as determined at decision block **608**. If so, the payout amount is added **610** to the credit accumulation, which may be added immediately, at the end of the bonus activity, or at any other predetermined time.

It is determined **612** whether any stop symbols formed part of the bonus group. If so, those display segments corresponding to stop-bonus symbols are eliminated **614** from the bonus group. If the bonus group has been entirely eliminated **616**, the bonus activity ends. In other words, once each of the active display segments of the bonus activity receives a stop-bonus symbol, the bonus activity ends. If the bonus group has not been entirely eliminated as determined at decision block **616**, the remaining active display segments of the bonus group (which may be a smaller bonus group due to the elimination of one or more display segments) are again spun as shown at block **604**. This process of eliminating display segments associated with stop-bonus symbols, and retaining display segments associated with continue-bonus symbols, continues until all display segments have presented a stop-bonus symbol therein. At least some, and in some embodiments all, of the continue-bonus symbols are associated with a payout value which is awarded to the participant.

FIG. **7** is another embodiment of the elimination bonus features in accordance with the present invention. In this exemplary embodiment, a standard mode of play is initiated **700**. An example of participating in the standard mode is to engage in normal slot game play, where a plurality of reels having symbols are spun, and payouts may be effected based on the symbol combinations occurring on one or more paylines. During this standard mode of play, the symbols in each reel of the display grid are stopped in accordance with an RNG or other random generation engine, as shown at block **702**. The bonus mode will be invoked if a predetermined one or more bonus symbols (or symbol arrangement) occurs in the display grid. Whether the predetermined symbols occur during standard mode play is determined at decision block **704**. If the predetermined symbols giving rise to the bonus mode do not occur, the participant may decide **706** whether or not to continue standard play. If the predetermined symbols giving rise to the bonus mode are presented on the display grid, the bonus mode is invoked **708**.

When the bonus mode is invoked, one embodiment of the invention includes de-emphasizing **710** those display segments or "cells" that do not correspond to the predetermined bonus symbols. For example, these cells may be "grayed out" or otherwise distinguished from those cells that do correspond to the predetermined bonus symbols. The active cells corresponding to where the predetermined bonus symbols occurred during standard play may be referred to herein as the "bonus group." The next step is to spin **712** the active cells associated with the bonus group. For example, each of the active cells will appear as if a reel is spinning at its respective location.

When this spinning action stops, a first one of the active cells is considered, as shown at block **714**. If the symbol at this first cell is a stop-bonus symbol as determined at decision block **716**, it will be eliminated **718** from the bonus group. If the symbol is not a stop-bonus symbol, it is a continue-bonus symbol, and it is determined **720** whether that continue-bonus symbol has an associated payout value. If so, that payout is effected **722**. For example, the accumulated credit total, and/or a cell payout subtotal, may be incremented according to the payout value. It is determined **724** whether there are more active cells in the bonus group, and if so, the next active cell **726** is considered. This process continues for each of the active cells comprising the bonus group that was spun at block **712**. It should be noted that the process including blocks **714**, **716**, **718**, **720**, **722**, **724**, and **726** are illustrated as being carried out in a sequential manner, however this is for purposes of facilitating an understanding of how each of the various active cells is analyzed for its resulting symbol. Those skilled in the art will readily recognize that these steps may be carried out serially, concurrently, or serial in part and concurrent in part.

When all of the active cells of the bonus group have been analyzed, it is determined **728** whether there is at least one active cell remaining in the bonus group. If so, this means that the bonus activity is still operative, and the "new" bonus group can then be spun **712**. The "new" bonus group will include all cells that did not have stop-bonus symbols associated therewith. Therefore, the bonus group will ultimately shrink in the number of active cells, until all cells have been eliminated from the bonus group.

Using the foregoing specification, the invention may be implemented as a machine, process, or article of manufacture by using standard programming and/or engineering techniques to produce programming software, firmware, hardware or any combination thereof.

Any resulting program(s), having computer-readable program code, may be embodied within one or more computer-usable media such as memory devices or transmitting devices, thereby making a computer program product or article of manufacture according to the invention. As such, the terms "article of manufacture" and "computer program product" as used herein are intended to encompass a computer program existent (permanently, temporarily, or transitorily) on any computer-usable medium such as on any memory device or in any transmitting device.

One skilled in the art of computer science from the description provided herein will be able to combine the software created as described with appropriate general purpose or special purpose computer hardware to create a computer system and/or computer subcomponents embodying the invention, and to create a computer system and/or computer subcomponents for carrying out methods of the invention.

Many modifications and variations are possible in light of the above teaching. For example, the present invention is not limited to what is traditionally known as "slot machines." The present invention is applicable to any gaming device to incorporate bonus rounds in connection with a gaming system. Also, while the illustrated embodiments have been described in large part in connection with a "slot machine," other gaming systems and concepts are also within the scope of the invention, such as video poker games, card games, lotteries, and other casino events implementing a video screen.

Further, it should be recognized that the manner of providing a repeated elimination of display segments as described herein may be applied during a standard mode of play, rather than in a bonus mode of play. For example, the standard mode of play be configured to allow the participant to continually engage in such a repeated elimination slot game without entering a bonus mode. In such a case, it may be preferred to provide a higher percentage of "continue" symbols that are associated with no credit award, or lesser credit awards to arrive at the targeted payout percentage of the slot game. Where the present invention is utilized as a standard play game, the user would first initiate the standard play (e.g., by pulling a lever, pushing a "play," "spin," "bet maximum credits," or other analogous play initiation button). In one such embodiment, all of the display segments, or a predetermined or random subset of the display segments are activated. These activated display segments are then spun, and stopped to randomly provide symbols in each of the activated display segments. Continue symbols would keep the associated display segments active for a subsequent spin, while stop or "discontinue" symbols would be eliminated from further spins for the remainder of that particular play event. Either or both of the continue symbols may be associated with credit awards, or may be associated with no credit award. In any case, the continue symbols allow the associated display segment to remain active, while discontinue symbols prohibit the associated display segment from further activity during that play event. The activated display segments repeatedly reduce in number as discontinue symbols appear, until each of the display segments have been associated with a discontinue symbol, thereby ending that particular play event. The standard play would then continue by initiating a new play event. Further, bonus rounds may still be associated with this standard play activity, and in one embodiment, the principles of the present invention may also be applied to that bonus event, such as by providing statistically higher credit awards to the continue (and optionally discontinue) symbols during the bonus event.

As can be seen from the foregoing description, the exemplary embodiments of the invention described herein have

been presented for the purposes of illustration and description, and many modifications and variations are possible in light of the above teaching. The description of these exemplary embodiments is not intended to be exhaustive or to limit the invention to the precise form disclosed. It is thus not intended that the scope of the invention be limited with this detailed description, but rather by the claims appended hereto.

What is claimed is:

1. A method for facilitating participation in a slot game, comprising:

presenting a display grid comprising a plurality of active display segments;

presenting symbols in each of the active display segments;

deactivating the active display segments that are associated with a discontinue symbol; and

repeatedly presenting symbols in each of the active display segments, and deactivating the active display segments associated with the discontinue symbols, until all of the active display segments have been deactivated.

2. The method as in claim **1**, wherein presenting a display grid comprising a plurality of active display segments comprises presenting the active display segments in a bonus mode of play in response to presentation of a symbol combination during a standard mode of play that invokes the bonus mode of play.

3. The method as in claim **2**, wherein a bonus symbol set comprising the symbols presented in each of the active display segments during the bonus mode of play is different than a standard symbol set comprising standard symbols presented in the display grid during the standard mode of play.

4. The method as in claim **2**, wherein presenting the display grid comprises presenting the active display segments within the display grid in a pattern governed by locations corresponding to locations of the symbol combination presented during the standard mode of play.

5. The method as in claim **1**, further comprising at least partially randomly selecting which symbol is to be presented in each of the active display segments.

6. The method as in claim **5**, wherein at least partially randomly selecting which symbol is to be presented comprises associating a reel strip having a predetermined symbol set to each of the active display segments.

7. The method as in claim **6**, wherein associating a reel strip having a predetermined symbol set to each of the active display segments comprises associating a different reel strip to each of the active display segments.

8. The method as in claim **5**, wherein at least partially randomly selecting which symbol is to be presented comprises associating a predetermined symbol set to each of the active display segments.

9. The method as in claim **5**, wherein at least partially randomly selecting which symbol is to be presented comprises associating a predetermined symbol set to a plurality of the active display segments.

10. The method as in claim **1**, wherein the display grid comprises a plurality of display segments including the active display segments and one or more inactive display segments, wherein the inactive display segments remain uninvolved with the presentation of the symbols, deactivation of the active display segments, and repeated presentation of the symbols and deactivation of the active display segments.

11. The method as in claim **10**, further comprising identifying the active display segments of the display grid as the display segments corresponding to predetermined symbols occurring in a previous slot game activity.

12. The method as in claim **11**, wherein the previous slot game activity is a standard mode slot game activity, and the presentation of the symbols, deactivation of the active display segments, and repeated presentation of the symbols and deactivation of the active display segments is provided in connection with a bonus mode slot game activity.

13. The method as in claim **10**, wherein the inactive display segments are de-emphasized to be distinguished from the active display segments.

14. The method as in claim **13**, wherein the active display segments that are deactivated by being associated with a discontinue symbol are de-emphasized to be distinguished from the active display segments.

15. The method as in claim **13**, further comprising retaining the discontinue symbol in each of the active display segments that are deactivated, thereby distinguishing the deactivated display segments from both the active display segments and the inactive display segments.

16. The method as in claim **1**, wherein the display grid comprises a plurality of display segments including the active display segments.

17. The method as in claim **16**, further comprising identifying the active display segments of the display grid as the display segments corresponding to predetermined symbols occurring in a previous slot game activity.

18. The method as in claim **16**, further comprising identifying the active display segments of the display grid as a subset of the display segments corresponding to predetermined symbols occurring in a previous slot game activity.

19. The method as in claim **18**, further comprising presenting a user interface to allow a participant to select the subset of the display segments corresponding to predetermined symbols occurring in a previous slot game activity.

20. The method as in claim **1**, wherein presenting symbols in each of the active display segments comprises presenting continue symbols in one or more of the active display segments, wherein the continue symbols direct its respective one of the active display segments to remain active.

21. The method as in claim **20**, further comprising providing a user interface to allow a participant to hold one or more of the continue symbols for a next presentation of the symbols in the active display segments.

22. The method as in claim **20**, further comprising associating a credit award with one or more of the continue symbols.

23. The method as in claim **22**, wherein associating a credit award comprises associating a positive credit award having an additive effect on an accumulated credit total.

24. The method as in claim **22**, wherein associating a credit award comprises associating a null credit award having no positive or negative effect on an accumulated credit total.

25. The method as in claim **22**, wherein associating a credit award comprises associating a negative credit award having a subtractive effect on an accumulated credit total.

26. The method as in claim **20**, further comprising associating a credit award with one or more of the continue symbols, wherein a plurality of the continue symbols must match before the credit award affects an accumulated credit total.

27. The method as in claim **1**, further comprising associating a credit award with one or more of the discontinue symbols.

28. The method as in claim **27**, wherein associating a credit award comprises associating a positive credit award having an additive effect on an accumulated credit total.

29. The method as in claim 27, wherein associating a credit award comprises associating a null credit award having no positive or negative effect on an accumulated credit total.

30. The method as in claim 27, wherein associating a credit award comprises associating a negative credit award having a subtractive effect on an accumulated credit total.

31. The method as in claim 1, further comprising deactivating a predetermined plurality of the active display segments in response to deactivation of one of the active display segments that is associated with a discontinue symbol.

32. The method as in claim 1, wherein repeatedly presenting symbols comprises automatically repeating presenting symbols and deactivating the active display segments until all of the active display segments have been deactivated.

33. The method as in claim 1, wherein repeatedly presenting symbols comprises providing a user interface to allow a participant to initiate each repeated presentation of symbols until all of the active display segments have been deactivated.

34. A casino gaming apparatus hosting a gaming activity having at least a standard mode of operation and a bonus mode of operation, the casino gaming apparatus comprising:

a video screen to present a display grid having a plurality of display cells;

a user interface to facilitate player participation in at least the standard mode of operation; and

a processor configured to designate a plurality of the display cells as active display cells in response to a predetermined symbol combination occurring during the standard mode of operation, and during the bonus mode of operation to randomly present symbols in the active display cells, deactivate the active display cells associated with a discontinue symbol, and to repeat the random presentation of symbols and deactivation of the display cells associated with the discontinue symbols until all of the active display cells have been deactivated.

35. The casino gaming apparatus as in claim 34, wherein the processor comprises a random number generator configured to randomly select the symbols for presentation in the active display cells.

36. The casino gaming apparatus as in claim 34, wherein the user interface comprises a user interface mechanism to allow the player to initiate each repetition of the random presentation of symbols.

37. The casino gaming apparatus as in claim 34, wherein the user interface comprises a user interface mechanism to allow the player to hold one or more symbols associated with the active display cells to a next one of the random presentations of symbols.

38. The casino gaming apparatus as in claim 34, wherein the video screen further comprises a bonus payout bar to present payout subtotals for each of the display cells associated with the bonus mode of operation.

39. The casino gaming apparatus as in claim 34, wherein the processor is further configured to automatically repeat the random presentation of symbols and deactivation of the display cells associated with the discontinue symbols until all of the active display cells have been deactivated without player intervention.

40. The casino gaming apparatus as in claim 34, wherein the casino gaming apparatus is a slot machine, and the standard mode of operation of the slot machine is a slot game.

41. The casino gaming apparatus as in claim 34, wherein the casino gaming apparatus is a video poker machine, and the standard mode of operation of the video poker machine is a poker game.

42. The casino gaming apparatus as in claim 34, wherein the casino gaming apparatus is a video bingo machine, and the standard mode of operation of the video bingo machine is a bingo game.

43. The casino gaming apparatus as in claim 34, wherein the casino gaming apparatus is a video keno machine, and the standard mode of operation of the video keno machine is a keno game.

44. A method for facilitating participation in a slot game on a slot machine, comprising:

(a) presenting a display grid having a plurality of display segments;

(b) electronically spinning a plurality of virtual reels visible in the plurality of display segments, wherein each of the virtual reels includes symbols from a collective symbol set;

(c) halting the spinning of the virtual reels to randomly present a symbol from the collective symbol set in each of the display segments;

(d) determining whether a predetermined symbol combination that invokes a bonus event is presented;

(e) if the bonus event is invoked, distinguishing active display segments associated with the symbols of the predetermined symbol combination from inactive display segments disassociated with the symbols of the predetermined symbol combination;

(f) spinning a bonus virtual reel in each of the active display segments;

(g) halting the spinning of the bonus virtual reels to randomly present a bonus symbol in each of the active display segments;

(h) deactivating the active display segments associated with a stop-bonus symbol; and

(i) repeating steps (f) through (h) until a predetermined number of the active display segments have been deactivated.

45. The method of claim 44, further comprising maintaining an active status for the active display segments associated with continue-bonus symbols.

46. The method of claim 45, further comprising awarding credits for predetermined ones of the continue-bonus symbols.

47. The method of claim 44, further comprising awarding credits for predetermined ones of the stop-bonus symbols.

48. The method of claim 44, further comprising locating the active display segments on the display grid at like display segment locations in which the predetermined symbol combination occurred.

49. The method of claim 44, wherein the predetermined number is all of the active display segments.

50. The method of claim 44, wherein each of the virtual reels encompasses a predetermined group of the display segments.

51. The method of claim 50, wherein each of the virtual reels is associated with a different virtual reel strip.

52. The method of claim 50, wherein each of the bonus virtual reels encompasses one of the active display segments.

53. The method of claim 52, wherein each of the bonus virtual reels is associated with a different bonus virtual reel strip.

54. A slot machine comprising:

means for presenting a display grid comprising a plurality of active display segments;

means for randomly presenting symbols in each of the active display segments;

means for deactivating the active display segments that are associated with a discontinue symbol;

means for awarding credits for continue symbols presented in the active display segments; and

means for repeatedly presenting symbols in each of the active display segments, awarding credits for continue symbols, and deactivating the active display segments associated with the discontinue symbols, until all of the active display segments have been deactivated.

55. A computer-readable medium having computer-executable instructions for executing a repeated elimination bonus event in a slot game, the computer-executable instructions performing steps comprising:

presenting a display grid comprising a plurality of active display segments;

randomly presenting symbols in each of the active display segments;

deactivating the active display segments that are associated with a discontinue symbol;

awarding credits for continue symbols presented in the active display segments; and

repeatedly presenting symbols in each of the active display segments, awarding credits for continue symbols, and deactivating the active display segments associated with the discontinue symbols, until all of the active display segments have been deactivated.

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